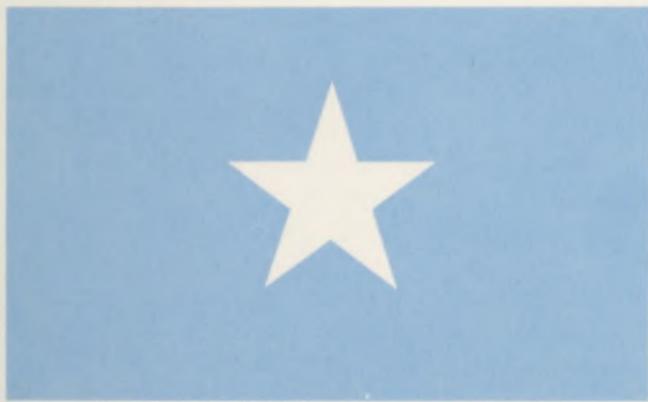


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RESTORE HOPE
SOCALIINTA RAJADA

Soldier Handbook

December 1992

ATC-RM-1100-065-93



Purpose of this Handbook

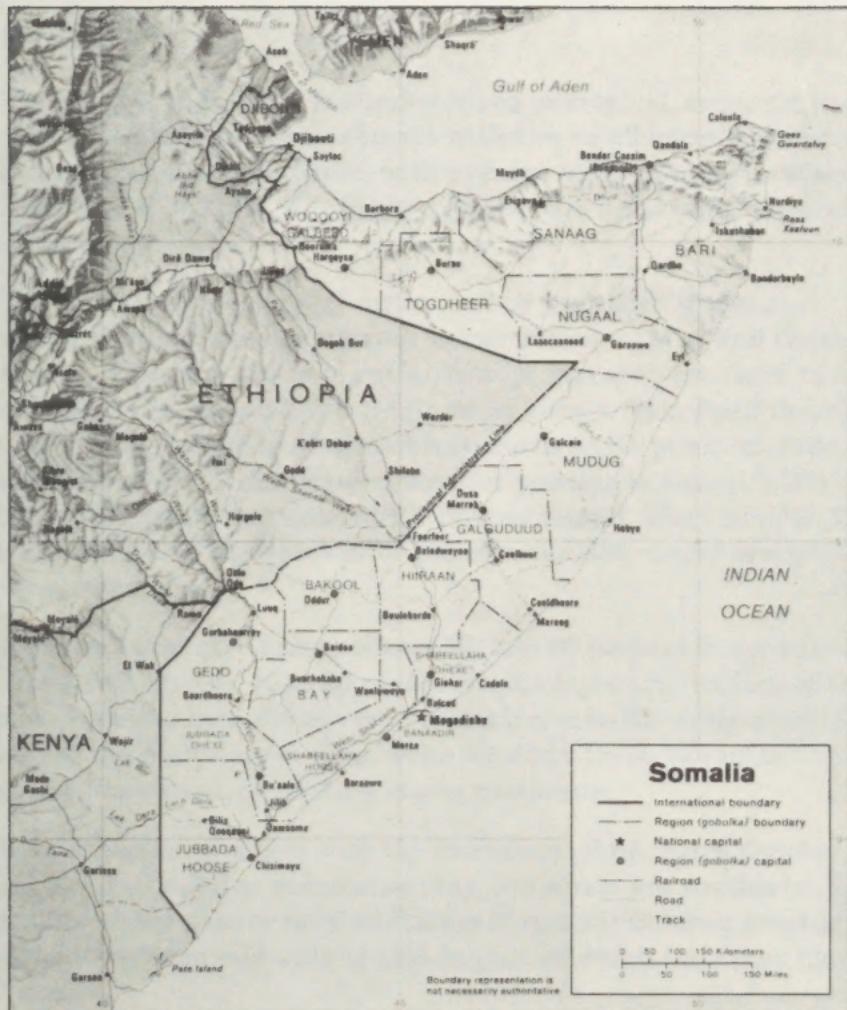
This handbook was produced by the United States Army Intelligence and Threat Analysis Center (USAITAC) of the United States Intelligence and Security Command (INSCOM). It has been designed as a ready reference at the unclassified level to encourage the widest possible dissemination of the publication. Its purpose is to provide US military personnel with a base of information necessary for effective operations in Somalia. Although primarily a stand-alone document, this handbook is intended to complement the Foreign Science and Technology Center's (FSTC) *Somalia Handbook--Foreign Ground Weapons and Health Issues*.

USAITAC wishes to thank Canada's Director General Intelligence, the Marine Corps Intelligence Center, the Armed Forces Medical Intelligence Center (AFMIC), and FSTC for support and assistance in the research and production of this handbook.

USAITAC also thanks Jane's Information Group for granting release of the materiel characteristics, specifications, and illustrations used in this handbook.

Contents

1. Terrain and Weather Overview	1
2. Cultural Overview	6
3. Key Somali Word and Phrases	21
4. Rank/Insignia	26
5. Military Operations	26
6. Weapons and Equipment	35
7. Mines	64
8. Health and Disease	113



Somalia

— International boundary
 — Region (gobolka) boundary
 ★ National capital
 ● Region (gobolka) capital
 - Railroad
 Road
 Track

Boundary representation is not necessarily authoritative

73版西文(B006211-10-97)

Terrain and Weather Overview

Climate

The climate of Somalia is characterized as tropical, semiarid to arid, and influenced by a monsoon climate with two small rainy seasons. The southern plains are hot all year, with average temperatures between 22°C (72°F) and 35°C (95°F). Highs and lows are somewhat moderated along the coast.

The rainy seasons vary by region and by year with frequent droughts. Bardera has two rainy seasons: March to May and October to November. The rainy seasons in the Beledweyne area are April to May and October. Chisimayu has a single rainy season from April through July. The rainy season in Mogadishu starts in April, peaks in June, and ends in November. The annual mean precipitation is almost 1,000 mm in Mogadishu, while it is much drier further inland. For example, Beledweyne and Bardera have means of 180 mm and 330 mm of precipitation per year, respectively.

Relative humidity varies between 70 and 80 percent in areas near the coast and between 40 to 60 percent in the more arid regions of the interior. Relative humidities are at a maximum in the early morning because of the nighttime cooling of the air and at a minimum in the early afternoon when daytime heating is at a maximum.

Wind direction changes with the monsoonal flow. From October or November until April or sometimes May, the winds are southerly. The winds blow to the east or northeast from May until October, reaching highest speeds from mid-July to mid-August at which time they blow 18 to 37 km/h.

Terrain

Somalia is characterized by extensive undulating plains that are interrupted occasionally by areas of dissected terrain and isolated hills. The Webi Jubba and Webi Shabelle are the only streams that flow year-round along most of their lengths. Irrigation canals and areas subject to inundation are located along both streams. All other streams in Somalia contain flow only for short periods following rainfall.

Vegetation is scattered deciduous open woodlands. Areas of irrigation agriculture occur along the Webi Shabelle and Webi Jubba rivers. Among the crops grown in the south are sorghum, maize, bananas, and cotton.

The highway system is the only real means of land transport in Somalia. Only 32 percent of the country's highways are covered with bitumen, crushed stone and gravel; the remainder are unsurfaced. Bridges are found mainly in proximity to the country's only two perennial rivers, the Webi Jubba and the Webi Shabelle.

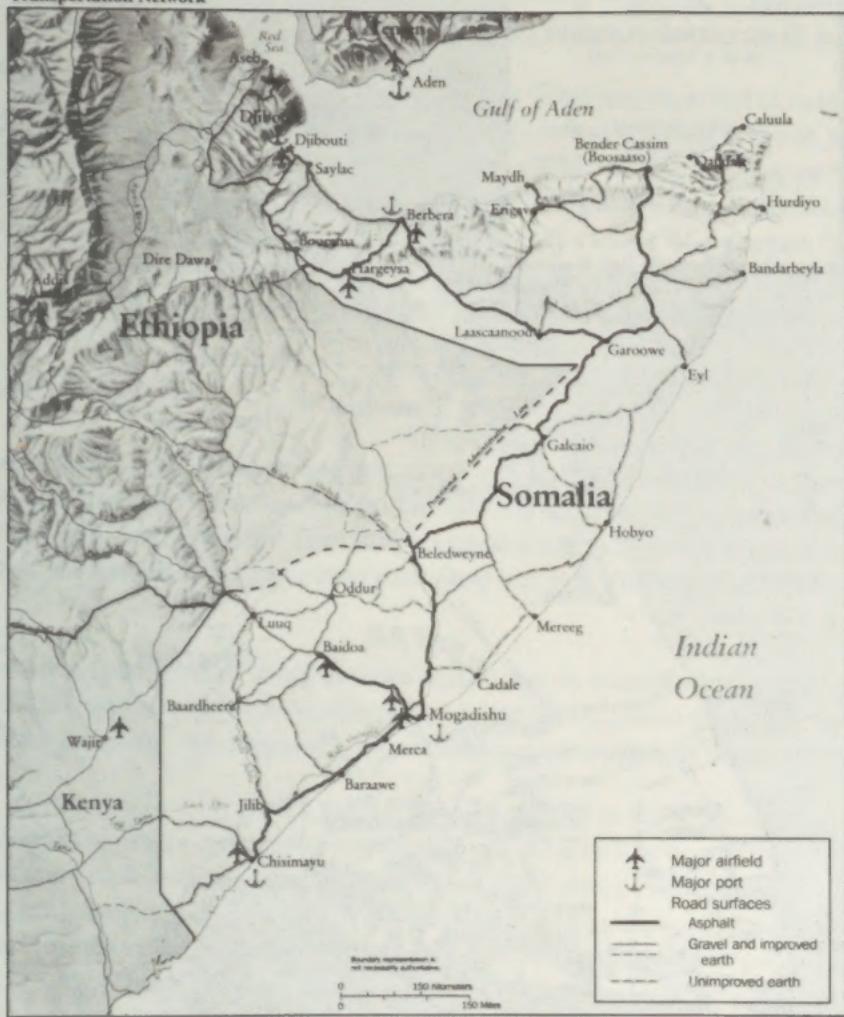
Terrain and Weather Effects

The seasonal rains cause flash flooding and long-term inundation that impedes cross-country mobility. In most cases, trafficability is greatly reduced on loose surface roads during the rainy seasons. Somalia does have a few high-capacity hard surface roads. Many paved roads, however, have surfaces badly damaged from overuse and from a lack of routine maintenance. Portions of these roads are in need of extensive repairs before they can be used to capacity.

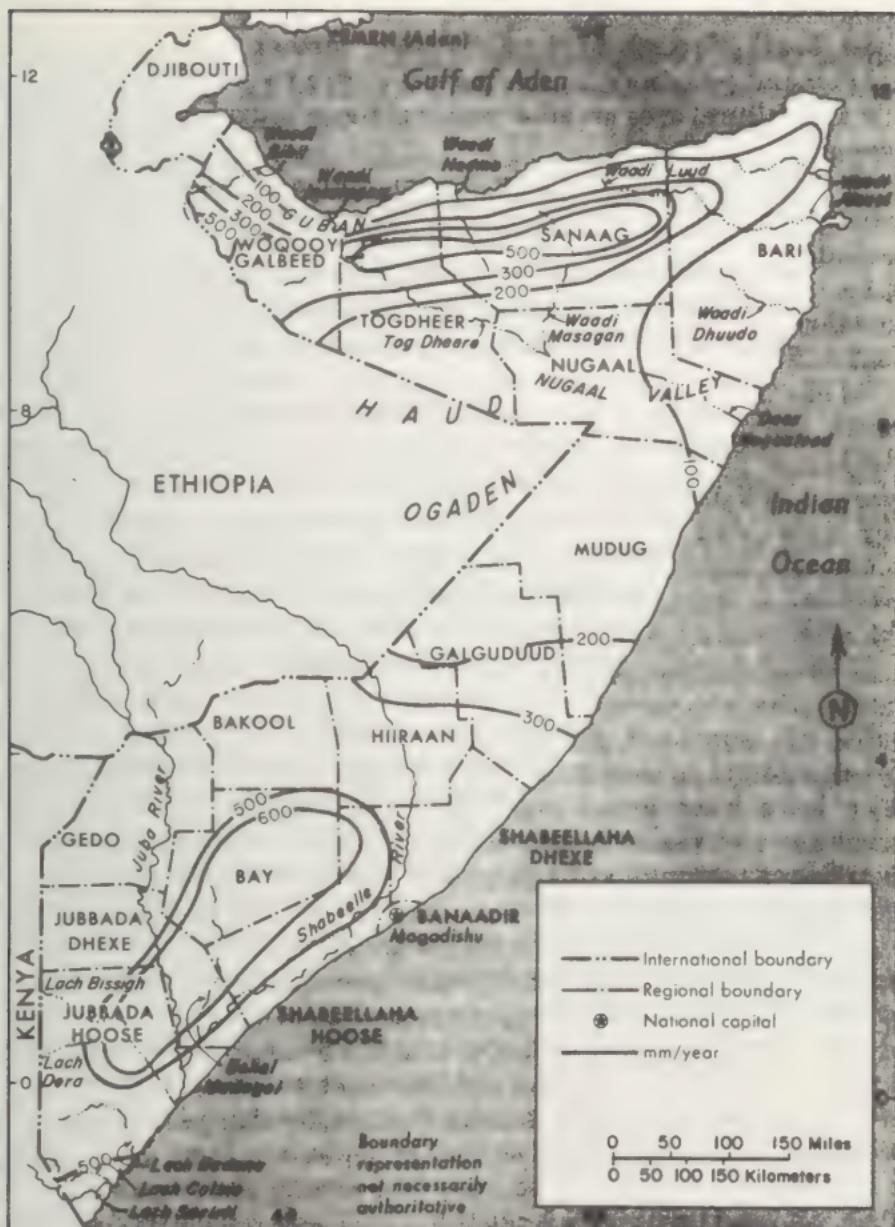
The poor transportation infrastructure and the effects of wet weather will inhibit the movement of food and other commodities. Extensive use of landmines by warring factions has made road move-



Transportation Network



726385 (002589) 9-02



ments hazardous. (See map for location of important lines of communication (LOCs), ports, and airfields.)

Cultural Overview

Historical and Political Background

Before 1960, the territory of modern Somalia was ruled by Italy, which had the southern and central part of the country, and by Great Britain, which ruled the north. On independence in 1960, these two areas united to form the Somali Republic with its capital at Mogadishu. A military coup in October 1969 put General Mohammed Siad Barre, commander of the army, in power. Over the years, his military regime grew progressively corrupt and alienated most Somalis. By the mid-1970s, corruption had become rife within the government, which was dominated by members of his Marehan clan. Siad Barre aligned himself closely with the Soviet Union and built a huge military in the 1970s. In 1977, after the USSR switched its support to neighboring Ethiopia, Siad Barre aligned himself with the US and the West. Despite this switch, his military suffered a massive defeat in its bid to wrest the Ogadeni region from Ethiopia in a war in which the latter was assisted by massive Soviet aid and Cuban combat troops.

Siad Barre was overthrown by a rebellion that broke out in northern Somalia in 1988. During the following 2 years it spread southward. In December 1990, the insurgents attacked Mogadishu, and in January 1991 Siad fled to a remote part of Somalia near the Kenyan border. Although a number of Somali insurgent factions drove Siad from the capital, the United Somali Congress (USC) remained in control of the city. Following the USC takeover of Mogadishu, the victorious factions appointed Ali Mahdi Mohammed as President. From the start, however, there was insufficient support for the new regime, which was dominated

by the Hawiye clan family. In addition, other parts of Somalia were dominated by separate insurgent groups, among whom the Somali National Movement (SNM), Somali Democratic Movement (SDM), and the Somali Salvation Democratic Front (SSDF) were prominent. There are at present at least 16 discreet clan-based factions throughout the country.

Starting in April 1991, fighting between various groups plunged Mogadishu and parts of the rest of the country into chaos. In May 1991, northern Somalia, under control of the SNM, declared its independence from the rest of the country. Starting in November 1991, battles between rival factions of the USC in Mogadishu have caused general devastation and high loss of life in the former capital. The two factions were originally clan-based and led by Ali Mahdi Mohammed and General Mohammed Farah Hasan "Aideed." Fierce fighting between the two has destroyed much of Mogadishu. Other factional conflict continued as well, including attempts by Siad Barre and his forces to retake the capital. In April to May 1992, the USC under Aideed's leadership decisively defeated Siad's forces and forced him to flee the country; he now resides in Nigeria.

The fighting in 1991 and 1992 prevented the shipment of food supplies to Mogadishu and other cities and chronic hunger attracted worldwide attention. Despite subsequent relief efforts through the late summer of 1992, armed gangs, either associated with Somali factions or operating independently, not only stole food from relief agencies but also contributed to a growing climate of lawlessness. A subsequent UN deployment failed to resolve security problems for international relief agencies, and in late November and early December 1992 the United Nations approved the large-scale deployment of forces to Somalia to assist with famine relief and provide security.

Ethnography

The Somalis dwell along the coast of the Horn of Africa. Somalis are not only found in Somalia itself but also in neighboring Kenya, Ethiopia, and Djibouti. Practically all Somalis are Sunni Muslims. Somali is a unique language within its group (Eastern Cushitic). There are few dialect differences in Somali, and the language is mutually intelligible to all native speakers. Other languages commonly spoken in Somalia are Arabic, English, and Italian. Arabic, used in religious education, is more common in the north; Italian in the south. Many Somalis speak and read English. English and Italian are the languages of higher education and technical fields.

Although most Somalis are pastoral nomads raising camels, sheep, and goats, many are city dwellers. The major urban centers along the coast have existed since the Middle Ages and have conducted a vigorous trade with Arabia, the Persian Gulf, and the Far East. Mogadishu, Merka, Chisimayu, Berbera, and other cities were, and still are, the largest centers of Arabic language and culture because of this heritage. Some Somalis are farmers, although in southern Somalia much of this work is done by non-Somali immigrants speaking Bantu languages and Swahili. Fishing is not, and never has been, a major industry in Somalia, in part because of a cultural aversion to the sea.

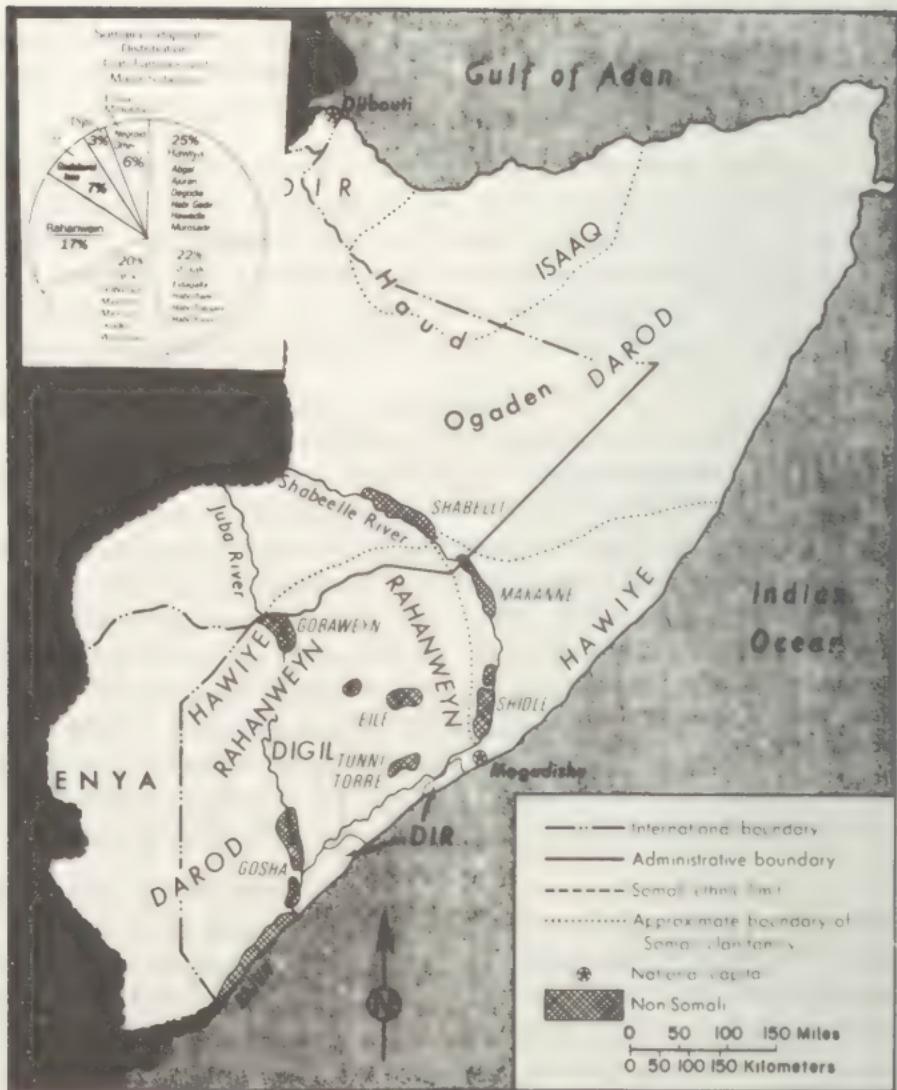
Some anthropological and cultural differences are noticeable between north and south. The Samaal who live in the north tend to be taller and of different appearance than many southerners. In the south are many non-Somali Bantu agriculturalists ruled by the Saab. Somalia's only two real rivers, the Shabelle and the Jubba, support the country's only extensive agriculture, which includes grains and plantation crops. There is also some agriculture in the north in the Hargeisa area.

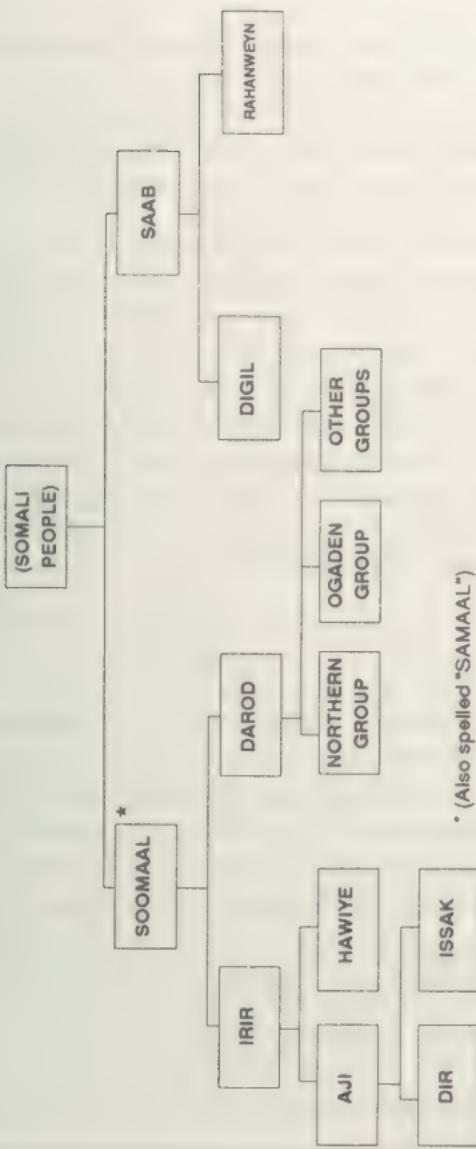
As a general rule, the most noticeable differences observed by outsiders in Somalia is among the nomads, the urban merchants, and the farmers. This difference in subsistence patterns affects attitudes. Many southerners have a less firmly established tradition of pastoral nomadic warfighting and prefer a stable polity that promotes agriculture. A similar attitude is found among city dwellers, who desire conditions that promote commerce and trade.

Somalis are organized into an extensive clan structure that has existed since the Middle Ages. The Somali-speaking peoples are organized into two large groups, the Samaal and the Saab. The Samaal, who live throughout the country, trace their descent from unions of Arab traders in the early Middle Ages with Somali women. The Samaal include the Irir and the Darod groups. The Irir include the Dir, Isaak, and Hawiye clan families. The Darod, which are not quite as tightly organized, include the Northern groups (including the Majertain), the Ogadeni, and affiliated groups. The Saab, who live in southern Somalia, include the Rahanwein and Digil clan families. But all groups speak the same language and share the same culture. Somalis regard clan affiliation and descent as very important, and very often it matters more who someone is within a clan than what they do.

Somali traditional society has existed since at least the 15th century. It emphasizes directness, reliability, and responsibility, and a willingness to take action. Clan structures emphasize loyalty to and from their members. The traditional lifestyle, already weakened by Siad Barre's government since the early 1970s, has suffered from the social impact of drought and internal conflict during the 1980s and early 1990s.

The Somali lifestyle is marked by independence, self-reliance, and an extreme tendency to aggressive action to attain an objective. Constant fighting over political and ethnic differences has marked Somali society





SOMALI CLAN-FAMILY RELATIONSHIPS

through its history. However, when Somalis are threatened at a higher level, be it clan, clan family, or nation, they will put aside quarrels to band together against potential attackers. Such cohesiveness is temporary, however, and when the threat declines, individuality of behavior once again dominates individuals' actions and objectives.

On a political level, the Somali national character is marked by an extreme dislike of central authority and government in general. As noted, most Somalis have a pastoral nomad background and little need or respect for formal government. Somalis regard Siad Barre's rule (1971-1991) as a ruinous period by a government with no knowledge of its responsibilities trying to impose a structured lifestyle on Somali society.

Notes on Clan Descent

Somali identity is inextricably bound up with clan and subclan affiliation. In this discussion, a clan family is a large grouping of separate clans such as the Hawiye, Issak, or Majertain. A clan or *qabiila* is composed of subdivisions, each of which is called a *jilib*. A *jilib* is a collection of families who have gathered together to share any blood-money or *dia* obligations its members may incur in fighting. All of these groups vary considerably in size or details of composition. Somalis would refer to the clan as consisting of a "father" and "sons"; each of the "brothers" consists of extended families. Each extended family, or *rer*, is named after an individual descended from the clan family ancestor.

An example of how a Somali would use descent as a reference can be seen with General Mohammed Farah Hasan "Aideed," leader of the largest USC faction. Aideed is a member of the Rer Jeleef, an extended family which is one of 13 in the "brother" grouping of the Saad, one of five divisions (*jilib*) of the Habr Gedr clan (*qabiila*). The Habr Gedr are one

of 6 large clans ("big fathers") in the Hawiye clan family. Thus, the descent is:

(Somali Peoples)

Samaal

Irir

Hawiye

Habr Gedr

Habr Gedr Saad

Rer Jeleef

(individual).

A clan family such as the Hawiye has no specific term in Somali and is simply called by its name, which refers back to the ancestor of all the clans it comprises.

Cultural Notes for US Military Personnel

It is impossible to exaggerate the fragility of the ethnic-based alliances. Coalitions and military control are relative terms in the Somali context--a relationship that seems strong one day may fall apart the next. Behavior that appears to Westerners as haphazard, or even chaotic, ultimately reflects the normal forces of clan fission and fusion at work. The nature of Somali social structure is such that every clan, lineage, and individual is in a potentially adversarial relationship (as well as a potential alliance) with other members of the society. No clan, lineage, or individual can ever be considered politically neutral. To a large degree, this reflects conditions in the harsh Somali environment, where water and food are such scarce and valued resources that clans will fight each other to protect the access of their herds.

To function effectively in Somalia, US personnel must be sensitive to two specific aspects of Somali culture. The first is that individuals do not need to take direct responsibility for their own actions, nor are they

responsible in any moral sense for the well-being of those not bound to them by kinship ties. Subclans are culpable for the actions of their members, and subclans look after the needs of their own members. This point is significant because many of the communities between the Webi Jubba and Webi Shabelle are outside the clan structure and have no one to look after their interests. The extreme vulnerability of these communities was underscored over a year ago by a scholar who said that ethnic identity in Somalia "frequently makes the difference between living and dying." The capability to secure food generally has been in the hands of armed Samaal and Saab clans, and the members of these clans have no responsibility to share with outsiders, such as the Gosha or other non-Somali groups.

The second characteristic of Somali society with implications for the RESTORE HOPE operation is that political neutrality is not part of the Somali world view. Somalis have trouble accepting that the United Nations and private organizations working in Somalia do so under strict guidelines designed to ensure impartiality. These organizations have recognized the importance of not seeming to favor one clan over another in food distribution. For Somalis, favoritism is perceived as an alliance constructed to exclude others, and armed factions could easily disrupt the flow of aid if they believe that supplies have been channeled to their enemies.

It is important to understand the Somali character and personality. Although stereotyping can be misleading, certain characteristics of the Somali identity repeatedly surface in written sources--and frequently are mentioned by Somalis themselves.

- Islam is at the heart of the Somali persona and has contributed to a widespread and pervasive sense of fatalism.

- Somali society has a strong sense of egalitarianism; this, however, is tempered with the ascription of clan descent as discussed.
- Somalis are wary of outsiders. Strangers do not have a place in the clan structure of Somali society, and for a Somali it is critical to know where an individual's loyalties and obligations lie.
- Somalis are prone to take an aggressive, proactive approach to resolving anything perceived to be a problem, whether in business or in relations with other clans. This does not mean that they have a predisposition toward violence, however. A formalized system of conflict resolution exists, and aggrieved parties are bound to use it. Violence is a means of last resort.
- To outsiders, encounters with Somalis can seem hostile, formal, and abrupt. Loud arguments are normal, and participants tend to dramatize and exaggerate their feelings. Somalis are proud of their language, and within Somali culture the art of oral expression through songs, proverbs, poetry, and discourse is highly developed.
- Group decisions are arrived at by consensus; coalition building is essential to group action. All parties to a process must be consulted before a decision can be proposed and negotiated.
- Despite the current crisis, Somalis have a strong cultural identity. However, patriotism has historically been expressed in encounters with outsiders (when the Ogadeni region of Ethiopia was invaded, for example) at which time it

has become a question of pride to unify all Somalis in the Horn of Africa under one flag.

- Somalis admire military strength and power. Ill-timed diplomatic gestures can be interpreted as a sign of weakness.
- Somalis are proud of their ethnic heritage and their nomadic culture.

Somali Factional Forces

Since the overthrow of Siad Barre in January 1991, Somalia has been divided among a number of ethnic-based factions. The main ones, from north to south, are:

United Somali Front (USF)

In Somali: Midnimadda Jabhada Soomaliyeed (MJS)

Leadership: Abdulamen Dual Ali

Ethnic affiliation: Isa (Dir)

Location: Djibouti border

Somali Democratic Association (SDA)

In Somali: Demograadiyed Ururka Soomaliyeed (DUS)

Leadership: Mohammed Abdallahi

Ethnic affiliation: Gadabursi (Dir)

Location: Ethiopian border

Main town: Boorama

Somali National Movement (SNM)

In Somali: Midnimadda Dhaqdhaqaaqa Soomaliyeed (MDS)

Leadership: Abdulrahman Ali "Tur"

Ethnic affiliation: Issa

Location: Somaliland

Main towns: Hargeisa, Burco

Somali Salvation Democratic Front (SSDF)

In Somali: Jabbada Badbaadinta Demogratiga Soomaliyeed
(JBDS)

Leadership: Abdullah Yusuf

Ethnic affiliation: Majertain (Darod)

Location: Majertainia

Main town: Garoe

United Somali Congress (USC)

In Somali: Golaha Midnimadda Soomaliyeed (GMS)

Leadership: Ali Mahdi Mohammed; General Mohammed Farah
Hasan "Aideed"

Ethnic affiliation: Hawiye

Location: Central Somalia; Mogadishu area Fractionalized
between Abgal and Habr Gedir; See NOTE 1

Somali Patriotic Movement (SPM)

In Somali: Dhaqdaqaqa Wadaniyinta Soomaliyeed (DWS)

Leadership: Ahmed Omar Jess; Omar Moallem

Ethnic affiliation: Ogadeni (Darod)

Location: Ethiopian border

Main towns: Beledweyn, Bardera; See NOTE 2

Somali Democratic Movement (SDM)

In Somali: Dhaqdaqaqa Demogradiyed Soomaliyeed (DDS)

Ethnic affiliation: Rahanwein

Leadership: Abdulkadir "Zoppu"

Location: West of Mogadishu

Main town: Baidoa

Somali National Front (SNF)

In Somali: Dhaqdhaqaaqa Jabhada Soomaliyeed (DJS)

Leadership: General Ahmed Warsame; General Mohammed Hashi Ganni

Ethnic affiliation: Marchan (Darod)

Location: Kenya border area

Main town: Luuq

Southern Somali National Movement (SSNM)

In Somali: Dhaqdhaqaaqa Midnimidda Koonfurta Soomaliyeed (DMKS)

Ethnic affiliation: Biyemal clan (Dir)

Location: Chisimayu area

Main town: Chisimayu

Notes:

1. The USC as of late 1992 remained fractionalized between groups supporting General Mohammed Hasan Farah "Aideed" and USC President Ali Mahdi Mohammed. The latter had himself proclaimed Interim President of Somalia on 29 January 1991. The main USC factions originally were based on Hawiye subclans, with Aideed being supported by the Habr Gedr and Ali Mahdi by the Abgal.

2. As of late 1992 the SPM was split into at least two major factions, with the main one in the Baidoa region led by former General Ahmed Omar Jess.

Islam in Somalia

Islam has existed in the area of modern Somalia since the 8th century AD. Almost all Somalis are members of the Shafii school of Sunni Islam. This school of belief holds its adherents to a stricter observance of

religion than the Maliki Sunnis found in most other Muslim African countries. Often, clan leaders are religious leaders and take an active part in mediating civil disputes as well as administering religious affairs. Since independence, Somalia's government has emphasized a separation of church and state. However, in recent years Somalia has seen a steady growth of political organizations operating under a religious cloak. This trend is likely to continue, although it is unlikely that it will have a major impact throughout Somali society in the near term.

Religious Groups

Somalia's numerous political Muslim organizations are part of a loose network, with some of the organizations and their members more interested in the political aspect of applying Islam to the secular world than others. Somali Muslims often cooperate with militant Muslim organizations elsewhere; a prime example is that of cooperation of the Sudanese Muslim Brotherhood with the al-Itihaad al-Islamiya (Islamic Unity) and Akhwaan al-Muslimiin (Muslim Brotherhood) in Somalia. In northern Somalia, many of the Muslim groups there are allied with Muslim militant elements in the Oromo and Somali areas of neighboring Ethiopia.

Al-Itihaad al-Islamiya is the principal Somali Muslim organization. It is strongest in the north, where in mid-1992 it attacked the SSDF in Galcaio and Bosaso. Subsequently it was able to defend its positions in Las Koreh against a SSDF and Warsangeli counterattack. Al-Itihaad is headed by Sheikh Ali Warsame, originally from Burao, and has representatives in Europe, Canada, the Middle East, and neighboring African nations. The organization was founded in 1979 in Saudi Arabia and is claimed to be financed by private persons and religious organizations in Saudi Arabia. The Saudis provide weapons, food, and medical supplies

to al-Itihaad members, who sometimes call themselves "mujahedin." Other nations, such as Iran and Sudan, reportedly provide support.

Akhwaan al-Muslimiin has most of its adherents in the Mogadishu area, but many are found in northern Somalia. It appears to be an import from Egypt, where the movement was founded in 1948. Adherents include many from the middle class and those with some high-school and advanced education. The structure consists of a loose network that interfaces with Muslim Brotherhood cells in other Muslim countries. Using this network, Muslim Brotherhood organizations can share resources and information.

Principal Somali Political-Military Figures

- Mohammed Farah Hasan "Aideed," a former Somali Army general, is the leader of the largest USC faction. Aideed's clan is the Habr Gedr of the Hawadle clan-family. Aideed's military leadership was critical in bringing down the regime of former president Siad Barre in January 1991. Aideed controls most of the area in which the worst famine conditions prevail, although his main seat of power is in and around Mogadishu. For the past year he has not only fought with his main USC rival, Ali Mahdi, but also with Siad Barre's forces and those of General Morgan.
- Ali Mahdi Mohammed "Diesel," a hotel owner and Hawiye businessman, was named by the USC as interim president of Somalia in August 1991. Earlier, he had himself proclaimed provisional president after the fall of Siad Barre. Ali Mahdi's clan is the Abgal of the Hawiye and his faction controls part of Mogadishu and part of the areas to the north and northeast.

- Mohammed Said Hersi "Morgan," a son-in-law of former president Siad Barre, is a former Somali Army general who has had training in the US Army Command and General Staff College. He was regarded as one of the former army's top officers. After the fall of Siad Barre, Morgan threw in his lot with Darod groups in southern Somalia and allied himself with the SSDF in northern Somalia. Although loosely allied with the forces of Siad Barre until May 1992, he has begun to establish his own control in the Kenya border area, capturing Bardera in October.
- Ahmed Omar Jess, a former colonel in the Somali Army, was elected head of a faction of the SPM in December 1991. Jess' forces, originally hostile to the USC, allied with it to counter Siad Barre's forces. The SPM ethnic base is Ogadeni Darod, and the SPM forces of Jess operating in the Chisimayu area have tentative support in the area from local Darod clans along the southern coast.

Other major military and political figures are those associated with the SNF, which is made up of the Marehan clan-based remnants of Siad Barre's old forces in Gedow province in the Luuq-Bardera and Luuq-Baidoa axes. There are two main groups of SNF fighters, each controlled by a former Somali Army general who used to be loyal to Siad Barre: Mohammed Hashi Ganni and Mohammed Ahmed Warsame.

Key Somali Words and Phrases

Notes on Pronunciation

Somali is written in the Roman alphabet. There are 5 short and 5 long vowels, pronounced as in the following English words:

A	"at"
AA	"lab"
E	"bet"
EE	ai in "chair"
I	"lip"
II	ee in "feet"
O	"lot"
OO	a in "call"
U	"put"
UU	oo in "roof"

Most Somali consonants are pronounced as in English. However, a few letters are not:

X	hard "h" sound
Q	hard "k" sound
C	Arabic "ayin"
KH	kh in "khaki" or "khan"
DH	th as in "rather"

English-Somali-approximate English pronunciation

Somali Military Terminology (English-Somali)

English Written Somali Spoken Somali

Units

sector/corps	<i>qeyb</i>	KAYB
division	<i>gaas</i>	GAS
brigade	<i>guuto</i>	GOO-TOH
battalion	<i>urur</i>	OOR-OOR
company	<i>horin</i>	HOR-IN
platoon	<i>koox</i>	KOOH

Equipment and Weapons

air defense	<i>madafiicta lidka</i>	MADA-FEE-I-TA LID-KA
artillery	<i>dayuuraha</i>	DA-YOOR-AHA
aircraft	<i>dayuurradaha</i>	DA-YOOR-AD
ammunition	<i>hub, saanad</i>	HUB, SAH-NAD
armor	<i>gaashaaman</i>	GAH-SHAH-MAN
artillery	<i>madfac (pl madaafiiic)</i>	MAD-FA-A/MA-DAA-FII-I
bazooka, RPG	<i>qoriga</i>	GO-RI-GA
fighter plane	<i>dayuurad dayaalka</i>	DA-YOOR-AD DA-YAAL-KA
infantry	<i>ciidanka or askarta lugta</i>	I-ID-AN-KA LUG-TA/AS-KAR-TA LUG-TA
mechanized infantry	<i>ciidamada gawaarida gaashaaman</i>	I-ID-AM-AD-A GA-WAH-RI-DA GAH-SHAH-MAN
pistol	<i>baastoolad</i>	BAAS-TOO-LAD
rifle	<i>rayfal</i>	RAY-FUL
rocket, missile	<i>gantaala</i>	GAN-TAH-LA
surface-to-air	<i>gantaala lidka</i>	GAN-TAH-LA LID-KA
missile	<i>dayuurradaha</i>	DA-YOOR-AD-AHA
tank	<i>care, carmati, taangi</i>	KAH-REE, KAR-MAH-TI, TOHN-GEE

Additional Military Terms

enemy	<i>cadow</i>	AD-OW
friend	<i>saaxiib</i>	SAAH-HEB
commander	<i>taliye</i>	TA-LI-YA
officer	<i>sarkaal</i>	SAR-KOL
soldier	<i>askari</i>	AS-KA-REE

troops	<i>ciidamino</i>	EEHD-AM-EE-NOH
general officer	<i>saareye</i>	SAH-REE-YE
colonel	<i>gaashaanle sare</i>	GAH-SHAHN-LIH
lieutenant	<i>gashaanle dhexe</i>	SAH-RI
colonel		GAH-SHAHN-LIH
major	<i>gaashaanle</i>	DHK-SEE
captain	<i>dhamme</i>	GAH-SHAHN-LIH
first lieutenant	<i>labad xiddigle</i>	DHAM-MIH
second	<i>xiddigle</i>	LAH-BAH HID-DIG-LIH
lieutenant		HID-DIG-LIH
sergeant	<i>saddex alifile</i>	SAD-DEHH AL-IF-LIH
corporal	<i>labad alifile</i>	LAH-BAH AL-IF-LIH
private	<i>alifile</i>	AL-IF-LIH

Other Helpful Words and Phrases

Phrases

give up	<i>iska deyn</i>	IS-KAH DAYN
come here	<i>kali halakan</i>	KAH-LEE HA-LA-KAN
come out	<i>kawareg</i>	KA-WA-REHG
go there	<i>halkaf aad</i>	HAL-KAF AHD
hands up	<i>gaacmaha kor u</i>	GAA-A-MA-HA KOR
	<i>taag</i>	OO TAG
halt	<i>joogso</i>	JOHG-SOH
lay down your	<i>hubka dhig</i>	HUB-KAH DHIG
weapons		
don't move	<i>joogso</i>	JOHG-SOH
sit down	<i>fariiso</i>	FAR-EE-SOH
get up	<i>toosid</i>	TOO-SID
stay there	<i>halkaf joogso</i>	HAL-KAF JOHG-SOH

what is this?	<i>kani wa maxay?</i>	KAH-NEE WA MAH-HAY
who is this man?	<i>waan kuma ninkani?</i>	WAH KOO-MAH NIN-KAH-NI
listen to me	<i>i maqal</i>	EEH MA-KAHL
no entrance	<i>lama geli karo</i>	LAH-MAH GE-LIH
what do you want? don't bother me	<i>maxaad rabtaa</i> <i>ha i labin</i>	KAH-ROH MAH-HAHD RAB-TAH HAH EE LAH-BIN
I don't understand you	<i>waxaad leedahay ma garan</i>	WAH-HAHD LEH-DAHAY MA GARAN
what is that?	<i>kaasi wa maxay?</i>	KAH-SEE WA MAH-HAY
do you speak English	<i>af ingiriski ma ku hadashaa?</i>	AF EEN-GER-IS-KEE MA KOO HA-DA-SHAH
excuse me	<i>iqa raali ahaw</i>	EE-KAH RAH-LE AH-AW
say it again	<i>mar labad dheh</i>	MAR LAH-BAD DHEH
American	<i>Maraykan</i>	MAH-RAY-KAN
where?	<i>xaggee?</i>	HAG-GEE
what is your name?	<i>magacaa?</i>	MA-GAH-AAH
good, OK	<i>waan jeclahay</i>	WON JEH-LA-HAY

Words

water	<i>biyo</i>	BEE-YOH
tea	<i>shaah</i>	SHOH
coffee	<i>qaxwe, bun</i>	KOH-HWE, BUN
food	<i>cunnada</i>	UN-NAH-DA
hello	<i>maa nabad baa</i>	MAH NAH-BAD BAH
good morning	<i>subax wanaagsan</i>	SOO-BAH WON-OG-SEN
good day	<i>maliin wanaagsan</i>	MAH-LEEN WON-OG-SEN
good after-noon, evening	<i>galab wanaagsan</i>	GAH-LAB WON-OG-SEN

good night	<i>habeen wanaagsan</i>	HAH-BEYN WON-OG-SEN
good bye	<i>nabad gelyo</i>	NAH-BAD GEL-YOH

Medical

I am sick	<i>waan bukaa</i>	WOHN BOO-KAAH
I feel very ill	<i>aad baan u bukaa</i>	ADH BAHN OO BOO-KAH
doctor	<i>takhtar</i>	TAKH-TAR
hospital	<i>isbitaalka</i>	IS-BIH-TAHL-KAH
medicine	<i>daawo</i>	DAH-WO
scorpion	<i>hangarale</i>	HAHN-GOR-AH-LEH
snake	<i>mas</i>	MOSS
pain	<i>xanuun</i>	HAH-NOON
fever	<i>gandho, xummad</i>	GAHN-DOW, HUM-MAHD
wound	<i>nabar, daqar</i>	NAH-BAR, DAH-KAHR
diarrhea	<i>shuban</i>	SHOO-BAHN

Rank/Insignia

As of early December 1992, factions in Somalia wear no uniform that distinguishes group members from one another, although at least some are referred to by rank.

In some locations, local police have adapted uniforms to distinguish themselves for relief agencies and faction soldiers. These local police may use rank insignia shown on page 27..

Military Operations

Key Judgments

- The clan fighters will not apply accepted rules of military logic when assessing the danger presented by friendly forces.

			
Major General (Enlarged for detail)	Brigadier General	Colonel	Lieutenant Colonel
			
Major	Captain	First Lieutenant	Second Lieutenant
			
Officers Cap Insignia	Chief Warrant Officer	Warrant Officer 3	Warrant Officer 2
			
Warrant Officer 1	Sergeant	Corporal	Private First Class

The unpredictability and sheer audacity of their attacks can generate a temporary advantage by surprise.

- Raids against rural, poorly protected, relief convoys and distribution and storage sites will increase until US forces expand into the countryside in larger numbers.
- Forced to cease combat and looting, clan forces will probably attempt to cache large amounts of food, small arms, and equipment. Involving clans in relief distribution without tight and constant supervision will result in the diversion of supplies away from the needy and to elements of the clan militia.

General

Doctrine

Lacking rigid unit structure and a grounding in conventional military training, most Somali factions lack anything formal enough to be called doctrine. Too few of the former SNA soldiers and junior officers are present to draw any inference in regards to how they operate above the small unit and tactical level. Although the larger factions have conducted brigade-size (in terms of numbers of armed combatants more so than in coherent command and control) operations during 1991 and 1992, these concentrations of force were temporary and gathered solely for the accomplishment of a major objective. It is unlikely that such large units will confront US forces operating in Somalia.

Tactics used by the different groups vary, but there are a few common denominators. Most of what is evident in the fighting has been learned through trial and error by the various insurgent factions over the last 2 years.

For the most part, tactics used by Somalia's factions are based on the nomadic traditions of the Somali people, adapted slightly because of weapon capabilities. Tactics stress high mobility, conducting planned operations, and engagement of targets of opportunity. There is a premium on achieving tactical surprise with small, fast raids, often followed by a hasty return to a village base.

Current fighting reflects the mode found in many traditional Somali accounts: raids, ambushes, and short, violent clashes among fighting groups marked by deeds of personal bravery. The old weapons of war such as spears and swords have vanished, being replaced by modern weapons such as machineguns and antiaircraft artillery, which are readily available. As a result, conflict in Somalia has been highly lethal.

Should the climate deteriorate, Somali clan militaries could use some of the following tactics against US forces:

- Generating widespread disturbances in an attempt to overwhelm local US forces.
- Creating incidents or massing crowds to lure US forces into a trap.
- Provoking US forces to overreact, thereby creating an opportunity to use hostile propaganda.
- Attempting to increase further interfactional strife.
- Sniping at roadblocks, convoys, outposts, and individuals.
- Attacking vehicles and buildings with artillery and mortars.
- Planting improvised explosive devices, either at specific targets or using random mining.

Organization

No organized units remain from the former Somali National Army (SNA) of Siad Barre. In addition, no formal command or unit structure is evident for the factional groups in central and southern Somalia. Typically, the organizational structure is adapted (in terms of numbers of personnel and equipment) by the leader on a day-to-day basis.

Morale

To date, morale in many faction armies is high, as the rewards for success are significant: food, fuel, weapons ammunition, and any other items that can be looted. Often fighters are drugged with a narcotic plant, *khat*, the leaves of which are chewed to produce a strong stimulant effect. Many younger insurgent fighters use it and suffer mood swings and irrational episodes. Users often do not or cannot react to commanders' instructions or directions--they are more susceptible to following personal or clan agendas when armed and under *khat* influence. Irrationality, even in the face of overwhelming odds, should not be discounted.

Specific Operations

Raids

Raids to destroy opposing forces and capture food, fuel, and weapons are common. Long-distance raids by groups of varying size mounted in 4-wheel drive (4WD) vehicles are frequent. Usually, factional forces will ensure that reconnaissance is conducted, minimal communications are on hand, and specialized logistical arrangements are in place before executing a raid. Clan military units will require a certain amount of time to build up proper stores of fuel and ammunition

between raids. Normally a 4WD requires a 55-gallon drum of fuel to stage a raid from Mogadishu to Baidoa or nearby areas. This is carried as a reserve fuel tank on the vehicle.

Approaching the objective, raiding parties conduct reconnaissance operations with several vehicles. Following an assessment of potential opposition, the attackers split into several groups and simultaneously attack. Night raids occur but are not frequent. Following the capture of the objective, as much as possible that can be carried away is looted before the opposing forces can regroup and counterattack. Large raiding parties often seek to establish bases of operations at towns along the avenue of approach to the target.

Ambushes

Ambushes are not as popular as raids, although this may change as UN forces start moving food and other supplies. The ambush is usually conducted against forces that have been determined by reconnaissance to be numerically inferior. Clan militia may conduct rehearsals before execution.

Roadblocks (used primarily as a means to "shake down" convoys of relief supplies) may be used in conjunction with an ambush. Ambush forces usually wait to attack as the opposing force tries to negotiate or bypass any obstructions. Landmines often are used immediately adjacent to roads and paths.

Landmine use is designed to not only counter mobility on LOCs but is used for booby-trapping waterholes or any areas that might support opposing forces. In the insurgency from 1988 to 1990, many civilian casualties in the north were incurred by such methods. Landmines are often used in connection with the deployment of sniper teams in an attempt to channel opposing forces. A variety of landmines are used,

including antipersonnel and anti-vehicle (see equipment section). A high degree of improvisation is used in planting mines in roads or pathways, or in rigging booby traps.

Defense

Preferring hit-and-run tactics, defensive operations are conducted only to hold key territory or towns. Aideed's USC forces effectively used a defense in April and May 1992 during an attack toward Mogadishu by SNF forces. With superior reconnaissance and early warnings, Aideed's forces were able to position themselves in the most advantageous positions to defend against the SNF. Unprepared to meet a determined force, SNF forces were defeated and forced to retreat. During the ensuing pursuit, the SNF lost much of its equipment and fled over the Kenyan border.

A pursuit often follows any degree of tactical success. Factional fighters follow retreating groups and attempt to outflank them and block their movements, taking advantage of any terrain features such as wadis (dry stream beds) or heavy bush to channel the fleeing forces. Factional fighters have no regard for international borders and have raided into Kenya, Ethiopia, and Djibouti in pursuit of defeated opponents seeking refuge. In Kenya they have attacked and inflicted casualties on security forces on numerous occasions. Only the presence of large numbers of regular military forces across those frontiers can effectively deter further border violations.

Most Somali fighters are loath to use positional warfare or non-mobile tactics. The land-cruiser with a mounted heavy weapon has replaced the camel or the horse as the nomadic warrior's means of mobility. A relatively rare exception to the rule may be seen in the small scale artillery duels over the control of parts of Mogadishu in late 1991 and early 1992.

Water is a key factor for combat operations in Somalia. Water holes and wells are key to the cross-country movement of troops. Somalia has few permanent streams, so movement is often keyed to wells and water holes. To station groups of fighters at wells to ambush approaching forces or to counter effective reconnaissance operations against the water point is a common tactic. Often wells and water holes are mined or booby-trapped.

Communications Assets

Somali factions, especially those based around Mogadishu, are able to obtain sophisticated communications equipment for contacting the outside world. These include satellite phones and telefax machines. Somali leaders have access to information nets through use of such technology. Because of in-country problems, however, such communications with the outside world may not always function.

In-country, however, problems do occur, as there is no standardization inside the factions for communications equipment. These include older military radios formerly possessed by the SNA as well as later additions, including walkie-talkies and transceivers, many robbed from relief agencies. There is no indication that any of the communications networks operate in a coordinated manner.

Command and Control

With no formal unit structure, command and control evolves around personalities and the ability of a commander to effectively use whatever fighters he has on hand. Conditions such as weather, food and drug availability, and the morale and health of the fighters, combined with availability of weapons, ammunition, and transport, all affect command and control in unpredictable ways.

Somalis are courageous and tenacious fighters. However, their inherent independent nature, and often personal reasons for belonging to the factions, present severe difficulties for any commander in assessing the number of personnel present for duty, their reliability, their willingness to carry out or transmit orders, or to refrain from exercising personal agendas.

The Somali national character also presents command and control problems. Factional commanders may find subordinates taking action on their own to raid convoys, rival clans, or other targets of opportunity. The use of *khat* by leaders and men often renders the giving and following of orders problematic. Adversarial relationships based on personal or clan differences are frequent as well.

US forces in Somalia will find factional commanders unable to control their troops effectively, despite any guarantees. Command and control procedures are just too poor to be counted on.

Logistics

Internally, logistics for factional fighters is basic. Weapons and ammunition are usually hoarded and cached, and, at the current (pre-involvement) rate of fighting, Somalis have enough small arms and ammunition to continue fighting indefinitely. To obtain food and fuel, relief organizations are targeted for plundering. One 55-gallon drum of diesel fuel is sufficient to enable a 4WD with mounted weaponry to range far into the interior to raid relief centers near airfields such as Baidoa, Beletweyn, and Oddur. Medical support is often obtained at gunpoint.

Weather and terrain affect logistics, especially in the rainy seasons. The deterioration of the road and bridge infrastructure forces off-road travel in all seasons. This results in delays and the likelihood of breakdowns. Internal air transport to key inland airfields is an alternative

not available to the factions. However, many factions have received air-lifts from other countries to such airfields using C-130 or similar aircraft.

Weapons and Equipment

General

The Somali factional arsenal consists of weaponry that belonged to the SNA plus numerous repeated purchases of small arms. Some of these are used; others are new. The latter include small arms from European and Asian manufacturers. The operability of heavy equipment previously ascribed to the SNA is unknown, but generally assessed to be very low. It is unlikely, for instance, that more than a dozen tanks (T-55/T-34) are operable out of the former SNA tank inventory.

Maintenance and repair capabilities are rudimentary although much ingenuity has been exhibited in cannibalizing old systems to repair newer, entirely different, ones. Conversions of older weapons systems are also common, as well as unorthodox uses of such; for instance, SAMs and AAA are almost entirely used in a surface-to-surface mode.

Major Weapons and Equipment

Air Defense Artillery

100mm KS-19 Antiaircraft Gun

57mm S-60 Antiaircraft Gun

37mm Type 63

37mm M1939

23mm ZU-23-2

ZSU-23-4

20mm Vulcan Cannon

20mm Cerebre

14.5mm ZPU-2

14.5mm ZPU-4

Artillery and Mortars

BM-21 MRL

155mm M198 Howitzer

152mm M37 Howitzer--No photograph

122mm D-30 Howitzer

105mm M101A1 Howitzer

120mm M-43 Mortar

82mm M-41 Mortar

Antitank Guns

107mm B-11 Recoilless Gun

106mm M40A1 Recoilless Rifle

89mm LRAC Antitank Rocket Launcher

85mm D-44 Antitank Gun

85mm D-48 Antitank Gun

Armored Vehicles

T-54/55 Main Battle Tank

M-47 Medium Battle Tank

BTR-50 Armored Personnel Carrier

BRDM-2 Armored Reconnaissance Vehicle

Fiat 6614 Armored Personnel Carrier

Fiat 6616 Armored Reconnaissance Vehicle

Mines

Numerous makes of various origins.

Small Arms

Several small arms types are in use in Somalia. Light machineguns



NAME: KS-19

ROLE: Anti-aircraft Artillery

CREW: 15

CALIBER: 100mm

EFFECTIVE RANGE: 12.6 km

RECOGNITION FEATURES:

- Four wheeled carriage.
- Large shield.
- Stepped tube.
- Pepper pot muzzle brake.



NAME: S-60

ROLE: Anti-aircraft Artillery

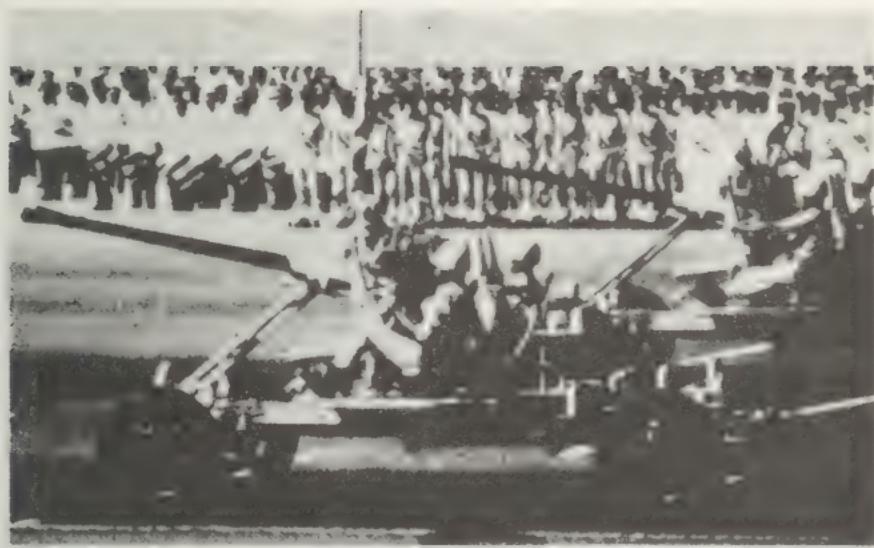
CREW: 7

CALIBER: 57mm

EFFECTIVE RANGE: 6 km

RECOGNITION FEATURES:

- Long slender tube.
- Large shield.
- Pepper pot muzzle brake.
- Four wheeled cruciform carriage.



NAME: TYPE 63

ROLE: Anti-aircraft Gun

CREW: 8

CALIBER: 2 x 37mm

EFFECTIVE RANGE: 3 km

RECOGNITION FEATURES:

- Cruciform carriage with four wheels.
- Twin barrel.
- Long slender tubes with flared muzzle brakes.
- Chinese-produced M1939 twin.



NAME: M1939

ROLE: Anti-aircraft Artillery

CREW: 8

CALIBER: 37mm

EFFECTIVE RANGE: 3 km

RECOGNITION FEATURES:

- Cruciform carriage with four wheels.
- Single barrel.
- Long slender tube with flared flash hider.



NAME: ZU-23

ROLE: Anti-aircraft Artillery

CREW: 5

CALIBER: 23mm

EFFECTIVE RANGE: 2.5 km

RECOGNITION FEATURES:

- Twin barrels.
- Prominent muzzle flash suppressors.
- Prominent ammunition box on each side of gun.



NAME: ZSU-23-4

ROLE: Self-Propelled Anti-Aircraft Artillery

CREW: 4

CALIBER: 4 x 23mm

EFFECTIVE RANGE: 2.5km

RECOGNITION FEATURES:

- Six roadwheels.
- No track return rollers.
- Large flat turret mounting quad guns.
- Large round radar mounted at rear of turret.



NAME: M167 VULCAN

ROLE: Anti-aircraft Artillery

CREW: 1

CALIBER: 20mm

EFFECTIVE RANGE: Vertical: 1,200m

Horizontal: 2,200m

RECOGNITION FEATURES:

- Six-barrelled Gatling gun.
- Single axle trailer, three screw-type supports, two on outriggers.



NAME: CERBERE

ROLE: Anti-aircraft

CREW: 3

CALIBER: 20mm

EFFECTIVE RANGE: 1,500

RECOGNITION FEATURES:

- Twin barrels with cylindrical flash hiders.
- Ammunition chests attached to cradle.
- Supported by 4 outriggers in firing position.



NAME: ZPU-2

ROLE: Anti-Aircraft Heavy Machine Gun

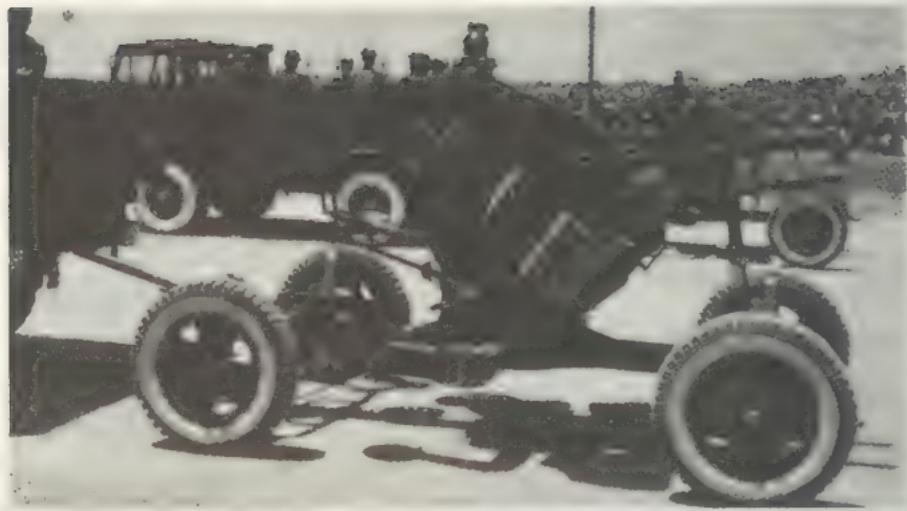
CREW: 4

CALIBER 14.5mm:

EFFECTIVE RANGE: 1400m

RECOGNITION FEATURES:

- Small single axle platform
- Twin tube
- Ammunition box on each side of tube



NAME: ZPU-4

ROLE: Anti-Aircraft Heavy Machine gun

CREW: 5

CALIBER: 14.5mm

EFFECTIVE RANGE: 1400m

RECOGNITION FEATURES:

- Four wheel carriage
- Four barrels
- Large ammunition box on each side of gun mount



NAME: BM-21

ROLE: Multiple rocket launcher

CREW: 5

CALIBER: 40 x 122mm

EFFECTIVE RANGE: 21km

RECOGNITION FEATURES:

- Truck mounted (usually a URAL-357D).
- 40 tubes arranged in banks of 10 tubes each.



NAME: M198

ROLE: Howitzer

CREW: 11

CALIBER: 155mm

EFFECTIVE RANGE: 30 km

RECOGNITION FEATURES:

- Split trail carriage.
- Double baffle muzzle brake.
- Two wheels.
- Stepped barrel.



NAME: D-30

ROLE: Howitzer

CREW: 8

CALIBER: 122mm

EFFECTIVE RANGE: 15.3 km

RECOGNITION FEATURES:

- Three-trail carriage.
- Towing lunette mounted on multiple or double baffle muzzle brake.
- Recoil mechanism above tube.

UNCLASSIFIED



NAME: M101A1

ROLE: Howitzer

CREW: 8

CALIBER: 105mm

MAXIMUM RANGE: 11.2km

RECOGNITION FEATURES:

- Split trail carriage
- Recuperator above and below barrel



NAME: M1943

ROLE: Mortar

CREW: 6

CALIBER: 120mm tube

EFFECTIVE RANGE: 5.5 km

RECOGNITION FEATURES:

- 1.8 m tube.
- Bipod supports.
- Circular stamped base plate.
- Can be carried on a separate, two-wheeled transporter and towed by suitable vehicle.



NAME: M41

ROLE: Mortar

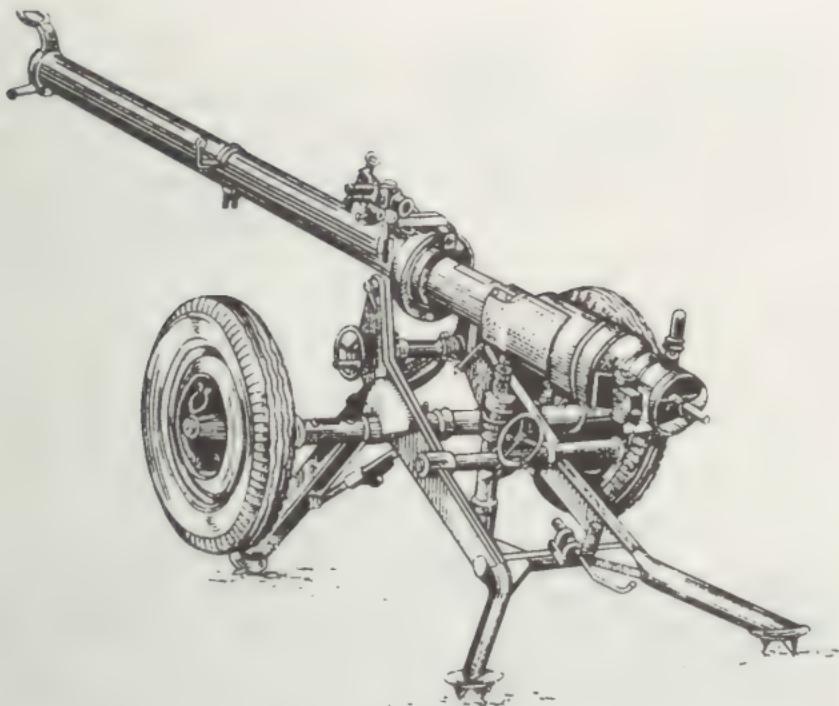
CREW: 5

CALIBER: 82mm

EFFECTIVE RANGE: 2,550 m

RECOGNITION FEATURES:

- Mount consists of a long elevation column with short legs and circular base plate.
- Wheels attach to the short legs, but are removed for firing.
- Can be towed from the muzzle end.



NAME: B-11

ROLE: Recoilless Gun

CREW: 4

CALIBER: 107mm

EFFECTIVE RANGE: 450m

RECOGNITION FEATURES:

- Two-wheeled carriage



NAME: M40A1 RECOILLESS RIFLE

ROLE: Anti-tank

CREW: 4

CALIBER: 106mm

**EFFECTIVE RANGE: 1,100 m Anti-tank
2500 m Anti-personnel**

RECOGNITION FEATURES

- Very long barrel with flared venturi at breech.
- May be ground mounted or mounted on any light vehicle.
- Spotting rifle above barrel.



NAME: LRAC 89

ROLE: Rocket Launcher

CREW: 2

CALIBER: 89mm

EFFECTIVE RANGE: 600m Anti-Tank

1000m Anti-Personnel

RECOGNITION FEATURES:

- Long launch tube with large cylindrical sight on right side.
- Bipod stand toward rear of launch tube.



NAME: D-44

ROLE: Anti-tank Gun

CREW: 8

CALIBER: 85mm

EFFECTIVE RANGE: 15.6 km

RECOGNITION FEATURES:

- Tubular trails.
- Large double baffle muzzle brake.
- Recoil mechanism located entirely behind shield.



NAME: D-48

ROLE: Anti-Tank Gun

CREW: 6

CALIBER: 85mm

EFFECTIVE RANGE: 1200m

RECOGNITION FEATURES:

- Long barrel with single step.
- Pepper pot muzzle brake.
- Scallop-shaped shield.



NAME: T-54/55

ROLE: Main Battle Tank

CREW: 4

MAIN ARMAMENT: 100mm

EFFECTIVE RANGE: 1,500 m

SECONDARY ARMAMENT: 12.7mm AA machinegun

7.62 coaxial machinegun

EFFECTIVE RANGE: 1,000 m (AA), 1,500 m (ground),

1,000 m (coaxial machinegun)

RECOGNITION FEATURES:

- Five large roadwheels.
- Space between first and second roadwheels.
- Rounded turret with hand rails.
- Bore evacuator at end of gun.



NAME: M47

ROLE: Medium battle tank

CREW: 4

CALIBER: 90mm

EFFECTIVE RANGE: 2000m

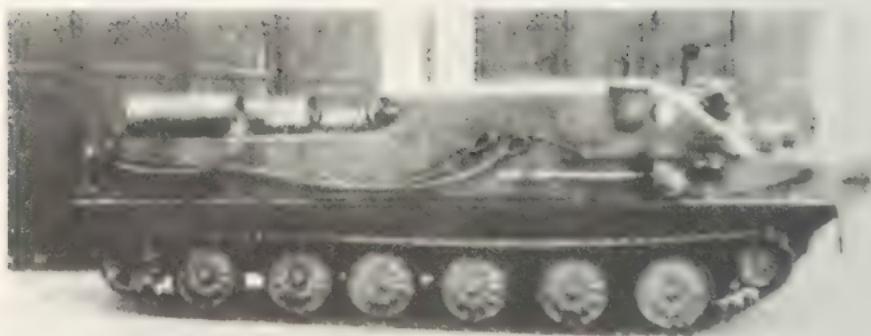
**SECONDARY ARMAMENT: 2 x 7.62mm (1 Bow Mg
1 coaxial MG)**

EFFECTIVE RANGE: 1000m

RECOGNITION FEATURES:

- Six roadwheels, three return rollers.
- Turret extends over back deck.
- Raised commander's cupola on right/top of turret.
- Fume extractor near muzzle brake.

NOTE: Some M47's have a "T-shaped" muzzle brake.



NAME: BTR-50

ROLE: Armored Personnel Carrier

CREW: 2 + 20 passengers

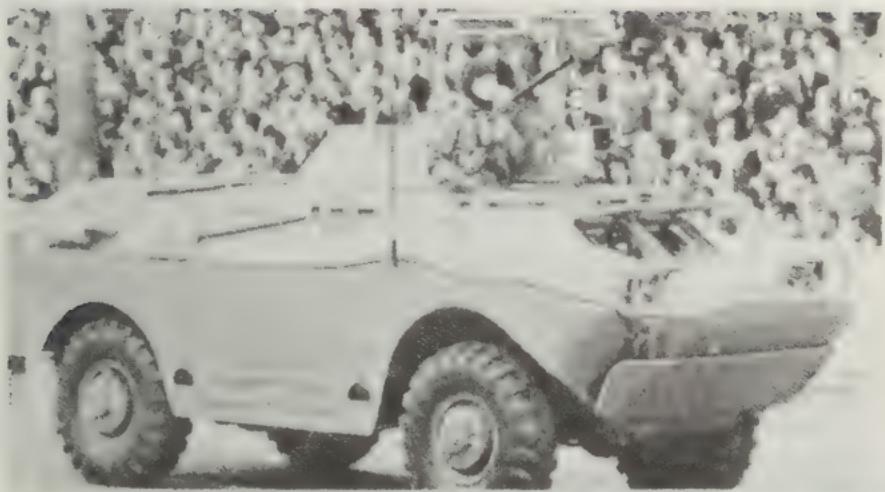
MAIN ARMAMENT: 14.5mm KPVT or

12.7mm DShK 38/46

EFFECTIVE RANGE: 1,200 m or 1,000 m

RECOGNITION FEATURES:

- Six roadwheels.
- Flat track, no return rollers.
- Lowered flat rear deck.
- Wedge-shaped front.
- Covered ports in rear for two hydro-jets.



NAME: BRDM-2

ROLE: Reconnaissance

CREW: 2 to 5 or up to 4 passengers

MAIN ARMAMENT: 14.5mm KPVT machinegun

EFFECTIVE RANGE: 1,200 m

SECONDARY ARMAMENT: 7.62mm PKT

EFFECTIVE RANGE: 1,000 m

RECOGNITION FEATURES:

- 4 x 4 truck chassis (with 4 retractable powered auxiliary wheels).
- Engine situated in rear.
- Turret centrally mounted on hull.
- Shorter nose than BRDM.



NAME: FIAT 6614

ROLE: Armored Personnel Carrier

CREW: 1 + 10 Passengers

ARMAMENT: 1 x 12.7mm MG

RECOGNITION FEATURES:

- Boat-shaped hull.
- No turret.
- 4 x 4 vehicle.
- Rear ramp.
- Door both sides.



NAME: FIAT 6616

ROLE: Armored Car/Reconnaissance

CREW: 3

MAIN ARMAMENT: 20mm cannon

EFFECTIVE RANGE: 2,000 m

SECONDARY ARMAMENT: 7.62mm machinegun

EFFECTIVE RANGE: 1,000 m

RECOGNITION FEATURES:

- 4 x 4 armored scout car.
- Boat-shaped hull.
- Driver position at center in front of turret.
- Rectangular grills above rear wheels on both sides.
- Turret centrally mounted.

include the AA-52 and the RPK, both 7.62mm. Medium machineguns include the SGM and the RP-46, both again are 7.62mm. Heavy machineguns are the DShk and the Browning M2 HB 12.7mm weapons. This list is by no means exhaustive. Weapons and ammunition of various types and origins have been acquired by the rival factions within the country.

Toyota Land Cruisers

Toyota Land Cruisers and pickups are the primary vehicles used by the factional forces in Somalia. These are seen carrying assorted weapons mounted in the bed, ranging from 23mm and 14.5mm antiaircraft guns, multiple rocket launchers, and medium and heavy machineguns.

Mines

Mine Threat

Knowledge of threat mine employment doctrine and mine warfare equipment is critical for planning and executing successful offensive, mobility, and sustainment operations. The threat facing relief efforts in Somalia is the state of anarchy, loss of civil control, and the emergence of several major and minor armed factions. After two or more years of drought, crop failures, and famine conditions food has become a priceless commodity. The acquiring of food and medical supplies by armed bands at the expense of the less advantaged population has become a way of life. As part of the resultant power struggles, civil wars, and present lawlessness the use of mine warfare has and is an ever present danger.

Until 1977, Somalia was a client state of the former Soviet Union. Much of the mine warfare doctrine and training provided the Somali armed forces came from former Soviet military schools and advisors. In and around critical tactical or political areas standard doctrinal mine-

fields may be encountered. More recent mine warfare may include mine operations of an indiscriminate or terrorist type where mines are laid in nonstandard patterns along main supply routes and near supply centers.

Five Types of Standard Minefields and Indiscriminate Mine Warfare

- Anti-landing: Used along coastlines and river banks as obstacles to amphibious assaults and river crossings.
- Antipersonnel: Used in front of antitank minefields and defensive positions to engage sappers and supporting infantry.
- Antitank: Used to protect against armor penetration.
- Mixed: Used when both antipersonnel and antitank mines are desired.
- Decoy: Used to mislead or confuse an enemy as to the location and composition of actual minefields or to cause enemy forces to react to a decoy area as if it were a live minefield.
- Indiscriminate: Used as a terrorist weapon generally against nonmilitary targets. Antipersonnel mines are used to control foot paths or access to supply points. Antitank mines are used to destroy, discourage, or holdup for ambush vehicles used for resupply and relief efforts.

Anti-landing minefields are emplaced in the shallow water, very shallow water, surf zone, and craft landing zone on the beach. Shallow water is 200 to 40 feet deep, very shallow water is 40 to 10 feet deep, and the surf zone is normally 10 feet deep to the high-water mark. Presently no known mines specially designed for anti-landing are in the Somali

inventory but, any water-tight mine can be used in these areas. The PMD-6 antipersonnel mines is able to be used underwater.

Antipersonnel minefields are set up in front of the forward edge and among the antitank mines for the purpose of discouraging a breach by dismounted enemy. They can be made from high explosive mines, fragmentation mines, or a combination of both. Characteristics include:

- Located on the forward edge of defensive positions
- 10 to 50 meters deep
- Width varies due to type of terrain (minefields should be tied into natural barriers)
- Two to four rows of mines perpendicular to the anticipated line of enemy advance
- Minimum of one meter between mines (blast mines)
- Twice the destructive radius between mines (fragmentation mines)
- Densities can reach 2,000 to 3,000 blast mines and 100 to 300 fragmentation mines per km of front.

Antitank minefields are set up primarily in armor threatened sectors. In front of, on the flanks of, on unit boundaries, or on avenues of approach to defensive, artillery, or key command, control, and communication positions. Characteristics include:

- 60 to 120 meters deep
- Width varies due to type of terrain (minefields should be tied into natural barriers)

- Three to four rows perpendicular to the anticipated line of enemy advance
- 20 to 40 meters between rows
- 9 to 12 meters between mines (belly-attack)
- 4 to 5.5 meters between mines (antitrack)
- Densities can reach 550 to 750 antitrack or 300 to 400 belly-attack mines per km of front.

Mixed minefields are the primary type of obstacle in contemporary combined arms combat. They are highly effective and easy to install, and difficult to overcome. Characteristics include:

- Antipersonnel mines will often be emplaced around a single antitank mine forming a cluster. This often results in a pattern of mine clusters. An often seen cluster consists of anti-personnel mines at 12 o'clock, 3 o'clock, and 9 o'clock around the antitank mine when facing the enemy.
- Another frequent emplacement of antitank mines are in rows on the enemy side of rows of antitank mines without mixing the two types in a single row.
- Minefield parameters are governed by antitank mine effective densities.

Decoy minefields are used to deceive the enemy into the exact location of live minefields or to apply the physiological deterrent of a minefield at a great reduction in manpower and equipment required to implant a live minefield. Often the sole objective is to slow the advance or halt an enemy unit for a period of time while the decoy minefield is

investigated or an actual hasty breach is attempted. Characteristics include:

- Digging up ground, installation of minefield markers, open displays of mine packing materials, and other signs of engineer activity
- Not always, but often decoy minefields will appear more obvious than a live minefield
- Decoy minefields can be used to divert enemy forces away from an area into a live (well concealed) minefield.

Indiscriminate mine warfare seldom follows patterns and is almost always concealed. The purpose of this type of minefield is to cause unpredictable damage to vehicles or casualties (often civilian). Mining of common avenues or pathways to important gathering areas (refugee areas, food distribution areas, etc.) or work areas (rural farm fields, water points, etc.). Antitank mines used to disrupt vehicle traffic are often emplaced alone or at sporadic intervals along a route. This kind of mining has been a major reason for the deployment of UN sanctioned military personnel to Somalia.

General Information

- No two minefields will be exactly alike.
- Scatterable and hasty minefields may be used to supplement conventional obstacles.
- Mining is used as part of a complex obstacle or barrier plan. Mines can be expected to be incorporated amongst non-explosive obstacles. All obstacles—explosive or non-explosive—should be covered by some kind of fires.

DM-11 ANTITANK MINE

DIAMETER - 300 mm (11.9 in)

HEIGHT - 95 mm (3.8 in)

MINE WEIGHT - 7.4 kg (16.3 lb)

EXPLOSIVE WEIGHT - 7 kg (15.4 lb)

Description:

Fuze Type - pressure friction type DM 46 plastic fuze

Sensitivity - 150 to 400 kg (330 to 880 lb)

Detectability - no metallic content

Capability:

Type Kill - blast effect

Antihandling - additional fuze well on side of mine opposite the carrying handle

Breach Guidance:

Mine Plow - removes armed mines from plowed area, detonated anti handling device

MICLIC - overpressure will activate single fuze

Charge Placement - adjacent to the DM-11

Remarks:

The mine is made of a polyester resin and TNT mixture. There is no casing to this mine. The fuze is all plastic with no metal parts.



DM-11

M7A2 ANTITANK MINE

WIDTH - 127 mm (5 in)

LENGTH - 178 mm (7 in)

HEIGHT - 64 mm (2.5 in)

MINE WEIGHT - 2 kg (4.5 lb)

EXPLOSIVE WEIGHT - 1.6 kg (3.5 lb)

Description:

Fuze Type - pressure plate

Sensitivity - 63.3 kg (140 lb)

Detectability - significant metal content in mine body

Capability:

Type Kill - blast effect

Antihandling -

Breach Guidance:

Mine Plow - removes mines from the plowed area

MICLIC - detonates pressure fuzes

Charge Placement - adjacent to the M7A2

Remarks:



TYPE 72

M15 ANTITANK MINE

DIAMETER - 337 mm (13.33 in)

HEIGHT - 125 mm (4.9 in)

MINE WEIGHT - 14.27 kg (31.39 lb)

EXPLOSIVE WEIGHT - 10.33 kg (22.73 lb)

Description:

Fuze Type - single impulse pressure M603 or M608

Sensitivity - 159 to 340 kg (349.8 to 748.0 lb)

Detectability - significant metal content in mine body

Capability:

Type Kill - blast effect

Antihandling - two additional fuze wells one on the side and one on the bottom

Breach Guidance:

Mine Plow - removes mines from the plowed area, detonates booby-trapped mines

MICLIC - detonates pressure fuzes

Charge Placement - adjacent to the M15

Remarks:

(NO PHOTO)

P2 Mk2 ANTITANK MINE

DIAMETER -

HEIGHT -

MINE WEIGHT - 6.6 kg (14.52 lb)

EXPLOSIVE WEIGHT -

Description:

Fuze Type - pressure plate

Sensitivity - 200 kg (440 lb)

Detectability - low metallic content

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mines from plowed area MICLIC - over-pressure defeats this mine

Charge Placement - adjacent to the P2 MK2

Remarks: The same nomenclature is used for an antipersonnel mine.

(NO PHOTO)

PRB M3 ANTITANK MINE

LENGTH - 230 mm (9.1 in)

WIDTH - 230 mm (9.1 in)

HEIGHT - 130 mm (5.1 in)

MINE WEIGHT - 6.8 kg (15.0 lb)

EXPLOSIVE WEIGHT - 6.0 kg (13.2 lb)

COLOR - olive drab

Description:

Fuze Type - pressure initiated

Sensitivity - 250 kg (551.2 lb)

Detectability - very difficult with hand-held detectors (metallic content approx. 1.0 gram; limited to spring, striker tip, and shear wire)

Capability:

Type Kill - blast effect

Antihandling - PRB M3 has been produced in variants with and without a secondary fuze well on the bottom

Breach Guidance:

Mine Plow - removes mines from plowed area, detonates booby-trapped mines

MICLIC - detonates pressure fuzes

Charge Placement - adjacent to the PRB M3

Remarks:

(NO PHOTO)

PT-Mi-Ba II and variant ANTITANK MINE

LENGTH - 395 mm (15.6 in)

WIDTH - 230 mm (9.1 in)

HEIGHT - 135 mm (5.34 in)

MINE WEIGHT - 9.6 kg (21.12 lb)

EXPLOSIVE WEIGHT - 6 kg (13.2 lb)

Description:

Fuze Type - pressure initiated Ro-7-II Sensitivity - 200 to 450 kg (440 to 990 lb)

Detectability - PT-Mi-Ba II has a low metallic content

PT-Mi-Ba II variant has a significant metal content in the body

Capability:

Type Kill - blast effect

Antihandling - no secondary fuze well

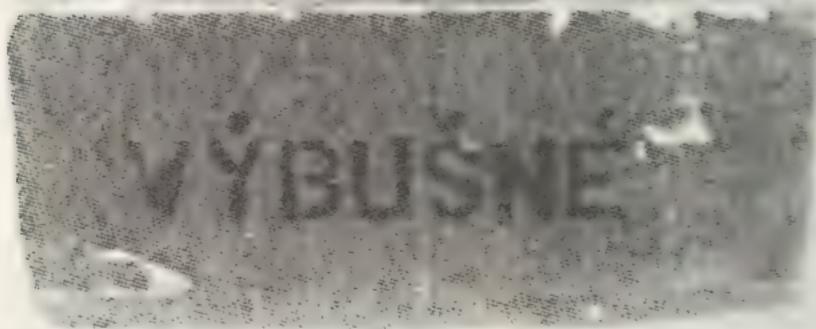
Breach Guidance:

Mine plow - removes armed mines from plowed area

MICLIC - detonates pressure fuzes

Charge Placement - adjacent to the PT-Mi-Ba II and variant

Remarks: The PT-Mi-Ba II is a plastic body mine. The PT-Mi-Ba II Variant is a metal case mine designed for mechanical emplacement.



PT-MI-BA-II

TM-46 and TMN-46 ANTITANK MINE

DIAMETER - 305 mm (12.0 in)

HEIGHT - 108 mm (4.3 in)

MINE WEIGHT - 8.6 kg (19.0 lb)

EXPLOSIVE WEIGHT - 5.7 kg (12.6 lb)

COLOR - sand brown, olive drab

Description:

**Fuze Type - pressure initiated - truncated tilt-rod,
contact initiated**

Sensitivity - 180 kg (396.8 lb)

**Detectability - visually (truncated tilt-rods)
- significant metal content in mine body**

Capability:

Type Kill - blast effect

Antihandling - secondary fuze well (TMN-46 only) on the bottom

Breach Guidance:

**Mine Plow - removes mines from plowed area, detonates
booby-trapped mines**

MICLIC - detonates pressure fuzes

Charge Placement - adjacent to the TM-46 or TMN-46

Remarks:



TM-46

TM-57 ANTITANK MINE

DIAMETER - 316 mm (12.4 in)

HEIGHT - 102 mm (4.0 in)

MINE WEIGHT - 8.47 kg (18.7 lb)

EXPLOSIVE WEIGHT - 6.34 kg (14.0 lb)

COLOR - olive drab

Description:

Fuze Type - delay-armed, blast-resistant, pressure initiated
MVZ-57 fuze

- truncated tilt-rod, contact initiated

Sensitivity - 200 kg (440.0 lb)

Detectability - visually (truncated tilt-rod) and with detectors
(significant metal content in mine body)

Capability:

Type Kill - blast effect

Antihandling - secondary fuze well in side

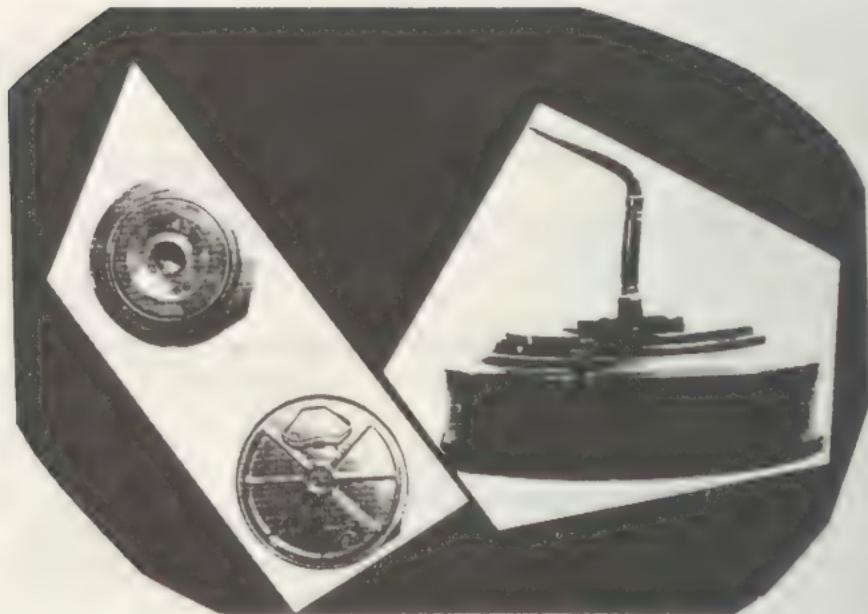
Breach Guidance:

Mine Plow - removes mines from plowed area, detonates
booby-trapped mines

MICLIC - drastic reduction in effectiveness (blast-resistant)

Charge Placement - adjacent to the TM-57 mine

Remarks:



TM-57

TM-62M ANTITANK MINE

DIAMETER - 320 mm (12.6 in)

HEIGHT - 102 mm (4.0 in)

MINE WEIGHT - 8.5 kg (18.7 lb)

EXPLOSIVE WEIGHT - 7.2 kg (15.9 lb)

COLOR - olive drab

Description:

Fuze Type - delay-armed, blast resistant, pressure initiated
MVM fuze

- delay-armed, vibration
- MVCh-62 fuze

Sensitivity - 200 kg (440.9 lb)

Detectability - significant amount of metal in mine body

Capability:

Type Kill - blast effect

Antihandling - No secondary wells. The magnetic and seismic
fuze have inherent antidisturbance features.
Additionally antilift devices are associated with
the TM-62 series mines.

Breach Guidance:

Mine plow - removes mines from plowed area, detonates booby
trapped mines

MICLIC - drastic reduction in effectiveness (blast-resistant

Charge Placement - adjacent to the TM-62M mine

Remarks:



TM-62M

TYPE 72 ANTITANK MINE

DIAMETER - 279 mm (10.9 in)

HEIGHT - 93 mm (3.6 in)

MINE WEIGHT - 8.13 kg (17.9 lb)

EXPLOSIVE WEIGHT - 5 kg (11 lb)

Description:

Fuze Type - pressure (long delay single impulse)

Sensitivity - 300 to 700 kg (660 to 1540 lb)

Detectability - high metal content (metallic)

- low metal content (nonmetallic)

Capability:

Type Kill - blast effect

Antihandling - yes

Breach Guidance:

Mine Plow - removes mines from plowed area, booby-trapped mines will detonate

MICLIC - reduced effectiveness against long delay type fuzes.

Charge Placement - adjacent to Type 72

Remarks: The mine comes in two versions a metallic and a non-metallic. The metallic version is designed for mechanical minelaying.

(NO PHOTO)

M14 ANTIPERSONNEL MINE

DIAMETER - 56 mm (2.2 in)

HEIGHT - 40 mm (1.6 in)

MINE WEIGHT - 99 g (3.48 oz)

EXPLOSIVE WEIGHT - 28.4 g (1 oz)

Description:

Fuze Type - pressure fuze integral part of mine

Sensitivity - 9 to 16 kg (19.8 to 35.2 lb)

Detectability - low metallic content (firing pin)

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mines from plowed area. Some will detonate

MICLIC - detonates pressure type fuzes

Charge Placement - adjacent to M14

Remarks: The fuze is an integral part of the mine. on the pressure plate in yellow markings is an arrow and the letters A for armed and S for safe. The mine can be made safe by turning the arrow to the S position and inserting the U shaped safety key.



M-14

P2 Mk2 ANTI PERSONNEL MINE

DIAMETER - 72 mm (2.8 in)

HEIGHT - 44.6 mm (1.73 in)

MINE WEIGHT - 95 g (3.2 oz)

EXPLOSIVE WEIGHT - 30 g (2 oz)

Description:

Fuze Type - pressure

Sensitivity -

Detectability - very low metal content

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mine from plowed area, some mines will be detonated

MICLIC - overpressure defeats this mine

Charge Placement - adjacent to the P2 Mk2

Remarks: the same nomenclature is used for an antitank mine. This mine is used as the detonator for the P series mines.

(NO PHOTO)

PMD-6 and PMD-6M ANTI PERSONNEL MINE

LENGTH - 196 mm (7.7 in)

WIDTH - 87 mm (3.4 in)

HEIGHT - 50 mm (2.0 in)

MINE WEIGHT - 400 g (14.1 oz)

EXPLOSIVE WEIGHT - 200 g (7.1 oz)

COLOR - natural wood

Description:

Fuze Type - pressure initiated

Sensitivity - 1 to 10 kg (2.2 to 22.0 lb) (depends upon conditions of release pin in MUV fuze)

Detectability - fair amount of metal in MUV fuze and detonator assembly

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mines from plowed area, some will detonate

MICLIC - overpressure defeats this type mine

Charge Placement - adjacent to the PMD-6 or PMD-6M

Remarks: Delay-armed if MUV-2, MUV-3, or MUV-4 fuze used.

Probing for this type mine with low pressure thresholds is hazardous.



PMD-6

PMP-71 ANTI PERSONNEL MINE

DIAMETER - 170 mm top to 220 mm bottom (6.7 in top to 8.7 in bottom) the shape is a truncated cone

HEIGHT - 115 mm (4.6 in)

MINE WEIGHT - 125 g (4.4 oz)

EXPLOSIVE WEIGHT - 100 g (3.5 oz)

Description:

Fuze Type - integral pressure fuze

Sensitivity - 6 to 8 kg (13.2 to 17.6 lb)

Detectability - low metal content (spring, striker)

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

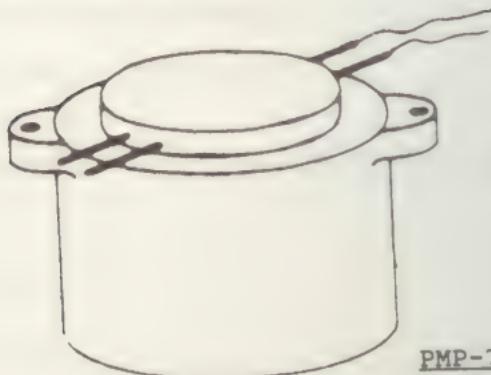
Mine Plow - removes mines from plowed area, will detonate some mines

MICLIC - overpressure will defeat mine

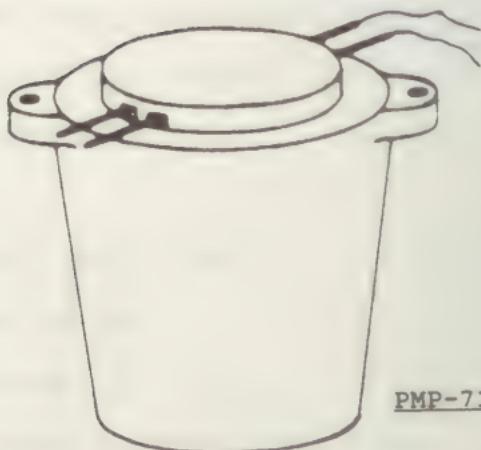
Charge Placement - adjacent to PMP-71

Remarks:

PMP-71-1/PMP-71-2 DRAWINGS



PMP-71-1



PMP-71-2

PMN ANTIPERSONNEL MINE

DIAMETER - 112 mm (24.4 in)

HEIGHT - 56 mm (2.2 in)

MINE WEIGHT - 550 g (1 lb 3.4 oz)

EXPLOSIVE WEIGHT - 200 g (7.1 oz)

COLOR - sand or black rubber cover bakelite body

Description:

Fuze Type - delay-armed, pressure initiated

Sensitivity - S to 8 kg (11.0 to 17.6 lb)

Detectability - fair amount of metal in fuze assembly and cover retainer

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine plow - removes mines from plowed area, some will detonate

MICLIC - overpressure defeats fuze

Charge Placement - adjacent to the PMN

Remarks:



PMN

POMZ-2 and POMZ-2M ANTIPERSONNEL MINE

DIAMETER - 60 mm (2.4 in)

HEIGHT - 107 mm (4.2 in)

MINE WEIGHT - POMZ-2 2.3 kg (5.1 lb)
- POMZ-2M 1.77 kg (3.9 lb)

EXPLOSIVE WEIGHT - 75g (2.60z)

COLOR - olive drab

Description:

Fuze Type - trip wire (tension) initiated
- pressure MUV fuze

Sensitivity - 2 to 5 kg (4.4 to 11.0 lb) (depends upon
conditions of release pin in MUV fuze)

Detectability - visual, stake mounted

Capability:

Type Kill - fragmentation effect

Kill radius - 4 m (13 ft)

Antihandling - none

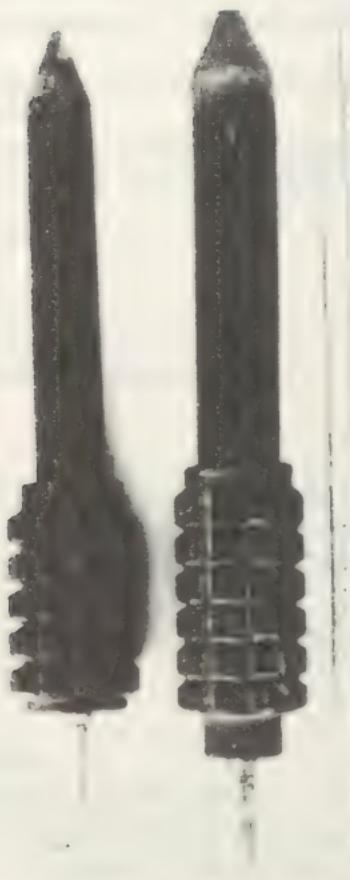
Breach Guidance:

Mine Plow - removes mines from plow area, some will detonate

MICLIC - heavy line charges readily defeat trip wire initiated
mines

Charge Placement - adjacent to the POMZ-2 or POMZ-2M

Remarks: Weathered/rotten mounting stakes (wood) present a hazard to clearance falling POMZ type bodies are heavy enough to initiate MUV fuzes.



POMZ-2 AND POMZ-2M

PPM-2 ANTIPERSONNEL MINE

DIAMETER - 124.5 mm (4.85 in)

HEIGHT - 62 mm (2.4 in)

MINE WEIGHT - 371 g (13 oz)

EXPLOSIVE WEIGHT - 110 g (3.9 oz)

Description:

Fuze Type - pressure activated piezoelectric Sensitivity -

Detectability - nonmetallic

Capability:

Type Kill - blast effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mines from plowed path, will
activate some mines

MICLIC - overpressure defeats this mine

Charge Placement - adjacent to the PPM-2

Remarks:



PPM-2

PP-Mi-Sr II ANTI PERSONNEL MINE

DIAMETER - 102 mm (3.2 in)

HEIGHT - 152 mm (4.7 in)

MINE WEIGHT - 3.5 kg (7.7 lb)

EXPLOSIVE WEIGHT - 325 g (11.44 oz)

Description:

Fuze Type - tension, tension release RO-1, RO-8 fuze.

Sensitivity - pressure fuze 3 to 6 kg (6.6 to 13.2 lb)
- pull fuze 4 to 8 kg (8.8 to 17.6 lb)

Detectability - significant metal in case

Capability:

Type Kill - bounding fragmentation effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mines from plowed area, detonates mines

MICLIC - effective against tripwire activated mines.

Charge Placement - adjacent to the PP-Mi-Sr

Remarks:

This is a bounding antipersonnel mine.

(NO PHOTO)

PRB 35 OR M35 ANTI PERSONNEL MINE

DIAMETER - 65 mm (2.56 in)

HEIGHT - 39 mm (1.54 in) without fuze 60 mm (2.36 in) with fuze

MINE WEIGHT - 158 g (5.6 oz)

EXPLOSIVE WEIGHT - 100 g (3.5 oz)

COLOR - black rubber top with olive drab lower section

Description:

Fuze Type - pressure fuze 5M fuze

Sensitivity - 5 to 15 kg (11 to 33 lb)

Detectability - nonmetallic

Capability:

Type Kill - blast effect

Antihandling - none

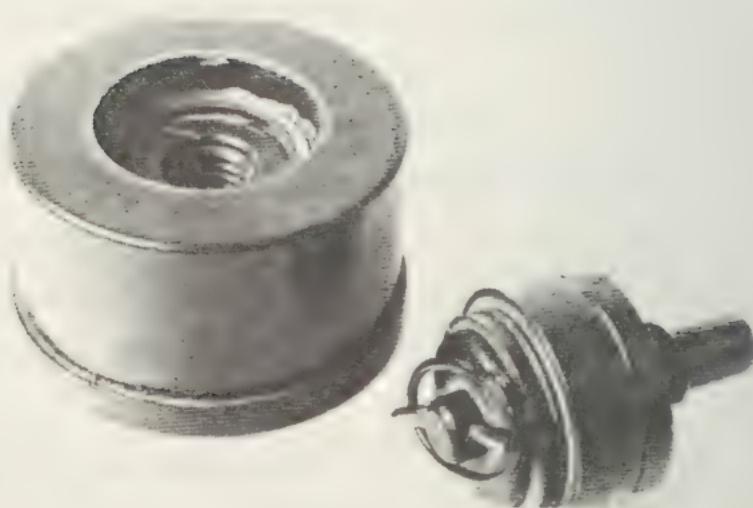
Breach Guidance:

Mine Plow - removes mines from plowed area

MICLIC - overpressure defeats this mine

Charge Placement - adjacent to M35

Remarks: This mine is referred to as PM35, M35, or M35 Bg.



PRB-M35

TYPE 72 and TYPE 72B ANTI PERSONNEL MINE

DIAMETER - 78 mm (3.1 in)

HEIGHT - 37 mm (1.5 in)

MINE WEIGHT - 150 g (5.3 oz)

EXPLOSIVE WEIGHT - 34g (1.20 oz)

COLOR - light green cover, green body

Description:

Fuze Type - Type 72 pressure initiated

- Type 72B delay-armed, pressure initiated

Sensitivity - Type 72 3 to 7 kg (6.6 to 15.4 lb) - Type 72B 3 to 7 kg (6.6 to 15.4 lb) or > 15 degrees tilt

Detectability - Type 72 difficult (metal content is limited to detonator and striker)

- Type 72B electronics allow for easier detection

Capability:

Type Kill - blast effect

Antihandling - Type 72b tilt activation device

Breach Guidance:

Mine Plow - Removes mines from plowed area, some will detonate

MICLIC - overpressure defeats pressure fuze

Charge Placement - adjacent to Type 72/Type 72B

Remarks: The same nomenclature is used for an antitank mine.

Probing for small mines with antidisturbance features and or low threshold pressure fuzing is hazardous.

(NO PHOTO)

V ANTI PERSONNEL MINE

DIAMETER - 38.46 mm (1.5 in)

HEIGHT - 396 mm (15.5 in) with stick; 141 mm (5.5 in) mine only

MINE WEIGHT - 1 kg (2 lb)

EXPLOSIVE WEIGHT - 90 g (3.2 oz)

Description:

Fuze Type - tripwire (pull)

Sensitivity -

Detectability - visual (on stick)

- detector (high metal content in body)

Capability:

Type Kill - fragmentation effect

Antihandling - none

Breach Guidance:

Mine Plow - removes mine from plowed area, will activate pull tripwires

MICLIC - effective against tripwire

Charge Placement - adjacent to V mine

Remarks:

(NO PHOTO)

GLOSSARY

AT	antitank
AP	antipersonnel
FE East Germany	former East Germany
FSU	former Soviet Union
g	gram
in	inch
kg	kilogram
km	kilometer
lb	pound
m.	meter
mm	millimeter
oz.	ounce
SOSR	Suppress, obscure, secure, and reduce

Health and Disease

Key Judgments

US military personnel deploying to Somalia for Operation RESTORE HOPE face greater infectious disease and environmental health risks than during Operations DESERT SHIELD and DESERT STORM. Disease and nonbattle injuries (DNBIs) are the greatest threat to the effectiveness of operational units and the success of the overall mission. Preventive medicine measures, good personal hygiene, command emphasis, and troop discipline at all levels will be essential for limiting DNBIs.

The major infectious disease risks are from food and waterborne diseases, followed by malaria. Environmental health risks are related to the dry season (including heat-related casualties, sunburns, and blowing dust), poor sanitation, indiscriminate disposal of wastes and decomposing corpses, no public health organization, and other concerns such as vehicle accidents and poisonous animals and plants.

Safe food and water sources do not exist in Somalia. Use of local food, water, and ice that has not been inspected and approved by US medical personnel (veterinary and preventive medicine units) will put operational forces at great risk of acquiring diarrheal diseases that could degrade the effectiveness of over 10 to 20 percent of the force within 24 to 48 hours. Also, without proper preventive medicine countermeasures, diarrhea outbreaks could render company-size units ineffective for up to 7 days.

Malaria is a very big problem in southern and central Somalia. If malaria prevention (mainly pills and mosquito repellents) is not properly followed, malaria could result in a 30 percent casualty rate within 7 to 14 days.

Environmental Health Risks of Operational Importance

General

US military personnel deploying to Somalia will encounter significant environmental health risks attributable to the approaching dry season, poor food and water sanitation, an absent functioning public health infrastructure, and other concerns such as vehicle accidents and poisonous plants and animals.

Heat-related injuries, sunburn caused by intense sunlight, respiratory and eye irritations related to frequent dust storms, and dehydration as water sources become more scarce are likely during the jilal, or dry season, which lasts from December through March. Mean daily maximum temperatures reach 40°C (105°F) in the north and slightly lower temperatures in the south. Temperatures are somewhat moderated along the coast by cooling sea breezes.

Food and water sanitation are universally poor throughout Somalia because a functional infrastructure is lacking and people are untrained in proper sanitation practices. Food and water handling practices are poor during the best of times. Indiscriminate disposal of wastes and decomposing corpses provide ample breeding opportunities for filth flies and vermin. Blowing dust contaminates all unprotected surfaces including meal preparation areas and water sources. Ice production, if available, must be considered nonpotable because the water source is nonpotable and contamination occurs during handling, storage, and distribution. Although not expected in a nonindustrialized nation, water

sources may have been contaminated by the indiscriminate and unregulated dumping of imported toxic wastes.

The recent seasonal change from the "dayr" monsoon (usually lasting through November) to the dry season and the current famine in Somalia are causing large-scale population shifts from rural areas to the more urban towns and villages. The large influx of migrants seeking food, water, and shelter places an additional burden on overburdened and exhausted urban resources. Additionally, residual pools of water and favorable breeding sites likely will contribute to increased mosquito populations.

Other environmental health risks include vehicle accidents and poisonous plants and animals. Casualties resulting from vehicle accidents are likely since there is no traffic control and periods of impaired visibility may accompany dust storms. High-risk poisonous snakes include cobras, mambas, and vipers. The semi-arid areas of Somalia support an array of thorny vegetation, capable of inflicting severe puncture wounds, and euphorbs that produce latex contact vesicants capable of irritating or blistering the skin.

Population

Population displacements have adversely affected efforts to improve health and quality of life. Somalia's population consists of 95 percent ethnic Somali. Despite this high level of homogeneity, bitter tribal, clan, and factional divisions exist. Previous efforts to provide modern services were complicated because most Somali were nomadic. More recently, inhabitants of Somalia have been regularly dislocated by conflict, drought, and famine.

Topography

Four geographic regions comprise Somalia:

- The Guban (burned land) region consists of the northern coastal plains that follow along the Gulf of Aden
- The northern highlands extend into Somalia from Ethiopia and are the location of Somalia's highest point, Shimber Beris, which reaches 2,408 m (7,900 ft) elevation
- The Ogo region descends from the highlands to form a shallow plateau valley marked by dry watercourses that merge with the Mudug Plain in central Somalia
- The vast Somali Plateau, with an average elevation of 900 m (3,000 ft), extends south to the Kenyan border. Somalia's two permanent rivers, the Shabelle and the Jubba, flow from the highlands into the Indian Ocean. The Shabelle River, after coming within 30 km (20 miles) of the Indian Ocean, turns south to parallel the Juba River for about 270 km before dispersing into a series of marshes and salt flats that eventually empty into the Juba during periods of heavy rain.

Climate

High temperatures, low humidity, seasonal monsoon winds, irregular rainfall with recurring droughts, intense sun, and frequent dust storms that sweep the eastern plains during summer combine to provide a very harsh climate.

Water Supply

Sources. Somalia, a country where droughts are expected 2 of every 5 years, suffers from chronic water shortages except in those areas bounding the Juba and Shabelle Rivers. In all other locations, people depend heavily on wells and boreholes.

Treatment/Distribution. Most rural water sources are not well protected from fecal contamination. Flooding, poor hygienic and waste disposal practices, and blowing dust increase the risk of contamination of surface waters and shallow wells. Although some urban areas may have piped water into some homes, shortages of electricity, poor maintenance, and damaged pumps, piping, and storage tanks frequently restrict access to water.

Living and Sanitary Conditions

Incessant conflict has devastated living conditions and worsened poor sanitation. Under normal circumstances, diets were chronically inadequate for most inhabitants. Now, malnutrition and starvation threaten much of the population, especially in southern Somalia. The limited urban infrastructure that existed before the civil war has collapsed. Virtually no organized health, education, waste disposal, piped water, or housing system remains functional. Primitive rural housing consists of mud- or dung-walled huts with thatched roofing, or tents made of skins that nomads use for shelter. Urban housing consists of similar structures along with a few, more modern structures, but many homes have been destroyed or abandoned due to the civil war.

Pollution

Somalia's marginal food producing lands and limited watershed are threatened by desertification. Overgrazing and increasing demand

for fuelwood have stripped away much of the vegetation, permitting Somalia's hot dry winds to carry away the remaining topsoil. Hazardous military ordnance litters the landscape in some areas. Although unexpected in a nonindustrialized nation like Somalia, water sources may have been contaminated by the indiscriminate and unregulated dumping of imported toxic wastes.

Hazardous Animals and Plants

Snakes. High risk snakes include: cobras, mambas, and vipers.

Invertebrates. Centipedes, scorpions, and black widow spiders are common; poor sanitation practices support thriving populations of filth flies; and a variety of other insects, including disease vectors, may be encountered, especially during the rainy season.

Plants. The semi-arid areas of Somalia support an array of thorny vegetation, capable of inflicting severe puncture wounds, and euphorbs that produce latex contact vesicants capable of irritating or blistering the skin.

Other. Stray dogs and cats (especially cats) are common in urban areas and may present a risk of exposure to rabies.

Prevention Summary

Nearly all of the health problems that are discussed in this booklet, as well as many others that could occur in sub-Saharan Africa, can be prevented if the following simple measures are frequently and forcefully emphasized.

Remember at all Times:

Safety first; be alert and be cautious.

Drink water from approved sources frequently during the day, even if you are not thirsty. It is recommended to drink 1 to 2 cans of liquid per hour.

Wash hands after using the latrine and before meals.

Take the prescribed malaria pills regularly.

Keep insect repellent on exposed skin.

Sleep under a bed net.

Follow work-rest cycles to prevent exhaustion.

Do not consume local foods or untreated water and ice.

Only defecate in constructed latrines or designated areas.

Avoid contact with all animals, large and small.

The Biggest Risks to US Soldiers

Heat--Can quickly cause soldiers to become dehydrated.

Local Food and Water--Often contaminated with germs that cause diarrhea and other diseases.

Violence--Unpredictable and uncontrolled in this setting.

Mosquitoes--Carry malaria and viruses that cause serious fevers.

Ticks--May transmit a wide range of diseases.

Animals--May harbor diseases such as rabies and brucellosis.

Soil, mud, and river water--May contain parasites that can enter your body through the skin or on food you eat.

People--Many may be carriers of tuberculosis and hepatitis. Despite the Islamic culture, you may be approached by prostitutes who have high rates of syphilis and AIDS. Avoid giving MREs to starving people, especially children; their systems will probably not tolerate engineered rations and may suffer more harm than good.

Health Problems That May Occur

Stress. The uncertainty that accompanies all rapid deployments, the unknown risks, the ground situation, the foreign environment, the fear of strange diseases, the unknown duration of deployment, and the threat of personal harm will negatively affect sleep patterns and the ability to rest and, hence, the performance of the mission.

Climate. Unacclimatized personnel, under stress, dealing with the logistical problems of water supply, and facing the physical exertion that accompanies deployment, are particularly susceptible to heat injuries, including heat cramps, heat exhaustion, and heat stroke. These injuries should be anticipated to be an initial risk among new arrivals.

Other sun-related problems, such as sunburn, vision disturbances, and lip and mucosal surface chapping, should be expected. Colds, flu, allergies, and respiratory/sinus/ear-infections can occur just as easily in the tropics as they do in cooler climates, especially when the fine sand begins to be blown around by strong winds during the major dry season (mid-December through March). Blowing sand can also cause skin burns and, in moist warm areas such as inside boots, sand can abrade the skin.

Infectious Diseases

General Considerations

Two important factors make overseas deployments risky in terms of infections: US soldiers lack natural resistance to many of the infectious agents encountered and public health standards, including sanitation and the extent to which people are immunized, are not as high in many countries as they are in the US.

Unfortunately, Sub-Saharan Africa is **the most risky region of the world** with respect to these factors. Two critical things to remember are: unlike many of the common infections in the US, a flu-like illness in tropical areas may well be a life-threatening disease that requires immediate medical attention, and prevention of disease is critical. Even infections that are curable with medicines may be very hard for doctors to diagnose rapidly.

The most important infectious diseases that may be encountered in Somalia are:

1. Diarrhea and other intestinal problems. Of all the possible health problems that have an infectious cause, the one that is **most likely to affect deploying personnel** is intestinal disease. There is a wide variety of different agents that can infect the human stomach including viruses, toxins released by bacteria (as in cholera and food poisoning), bacteria themselves (such as *Salmonella*), protozoa (causing giardiasis or amoebiasis), and parasites (such as roundworm). People usually get infected by consuming foods or beverages contaminated with human feces. By far the most common sign of infection is diarrhea. Other possible signs include stomach cramps, nausea, vomiting, and dehydration. Hot weather only makes matters worse by causing additional fluid loss through the skin. History has proven that an epidemic

of intestinal disease can make large numbers of soldiers ineffective for several days and sometimes longer.

2. Malaria. This is an infection of the blood cells and liver by a mosquito-borne parasite. Malaria-transmitting mosquitoes are found throughout Somalia during every season of the year. The predominant species of malaria parasite there is called *Plasmodium falciparum*, which causes the most dangerous form of disease. Patients with falciparum malaria who are not treated in time can deteriorate very quickly and die. Again, any flu-like illness you have may very well be a life-threatening illness that requires immediate medical attention.

3. Respiratory diseases. In the US it seems logical to associate colds, sinus infections, and influenza with cold weather since these usually seem to occur in the winter. However, respiratory infections can occur any time of the year even in the tropics, and they are especially common in crowded conditions. In VietNam the incidence of respiratory infections as a cause of hospitalization or assignment to quarters was similar to that for diarrhea. Acute (rapid onset) respiratory diseases usually are not life-threatening to young, healthy adults, but widespread transmission could compromise efficiency and readiness on a deployment.

4. Skin diseases. The hot, and at times, humid environment of Somalia, combined with less than ideal hygiene, encourages skin disease. VietNam, skin diseases were the third-leading cause of diseases-related hospital admissions, and as the war progressed, they exceeded the impact of malaria. The heat in Somalia will induce or exacerbate conditions including prickly heat, topical acne, eczema, contact dermatitis, folliculitis, athlete's foot, and jock itch. The severity and prevalence of fungal infections is directly related to the degree of exposure to water

and wet clothing. In addition, women may be more prone to developing yeast vaginitis, especially if they are taking oral antibiotics.

5. Sexually transmitted diseases. These are not unique to Somalia but have the potential to cause a higher-than-average rate of sick call attendance, especially during long deployments. Gonorrhea and other forms of urethritis ("drip"), syphilis, chancroid, warts, herpes, hepatitis B infection, and infection with the AIDS virus (HIV) all occur at a high-level among prostitutes.

6. Systemic infections. A systemic or generalized infection is one that affects several parts or systems of the body. These illnesses typically begin with fever, weakness, headache, and muscle aches. The most important of these in Somalia is malaria. Others are:

a. Diseases spread by mosquitoes, ticks, fleas and lice. There is a whole group of mosquito-borne viruses in Somalia that infect the blood and lymph nodes and cause systemic diseases, including break-bone fever (dengue), chikungunya fever, West Nile fever, and Rift Valley fever. In addition to the severe flu-like symptoms that these illnesses cause, some more specific symptoms can occur. For example, dengue fever often produces severe joint pains and a rash. Yellow fever, another mosquito-borne viral disease, is not being reported in Somalia, but the country is in the region of Africa where infected mosquitoes are known to be prevalent, so that yellow fever could be re-introduced.

The tick-borne diseases in Somalia cause a similar variety of symptoms. These diseases include Crimean-Congo hemorrhagic fever and African tick typhus caused, respectively, by a virus and a virus-like agent. There are forms of typhus are spread by lice and fleas. In crowded refugee camps, people can become infested with disease-carrying lice, or rodents carrying infected fleas can introduce typhus (or plague, a bacterial flea-borne infection) into the community. In port cit-

ies or in areas where grain is stockpiled, the potential for murine typhus will be high unless rodent control is strictly enforced.

b. **Viral hepatitis.** Liver disease can be caused by several types of viruses. Epidemic hepatitis (due to either type A or type E) is spread from person to person through water or food that is contaminated with human feces. Serum hepatitis (due to either type B or type C) is spread by sexual contact, blood transfusion, and contaminated needles and medical instruments. Both forms of hepatitis cause fever, which begins abruptly and is associated with intestinal symptoms and jaundice (yellow skin) that last 1 to 3 weeks. When a person is infected with one of these viruses, several weeks may pass before any of the symptoms emerge (as few as 2 weeks for epidemic hepatitis and up to 8 weeks or more for serum hepatitis). Once symptoms begin, they may continue for several weeks. Large wildfire outbreaks of epidemic hepatitis can occur in camps, crippling a military operation. In Somalia, the risk of contracting serum hepatitis is high among those, such as health care workers, who may contact the blood or body fluids of local people. The local blood supply is not adequately screened, and single-use syringes and needles are not likely to be available in local health care facilities. These factors also make the risk of HIV infection high.

c. **Meningococcal disease.** This is spread through direct contact with droplets from the nose and throat of infected people and usually infects the lining of the brain and spinal cord (bacterial meningitis) or appears as a severe systemic infection (meningococcemia). In either case it can be rapidly fatal, sometimes even when antibiotics are given. There are several different strains of bacteria that cause this infection: fortunately the meningococcal vaccine that is given to US soldiers protects against the strains that most often cause epidemics in sub-Saharan Africa.

d. Snail fever (schistosomiasis). Snail fever is a disease that can affect many organs and is caused by microscopic worms that are found swimming in fresh water (streams, rivers, lakes). After leaving their initial host (snails), they enter the human body by penetrating the skin.

e. Diseases spread by sandflies. Kala-azar is an infection of the liver, spleen, and other organs by a sandfly-borne parasite can be quite severe; it is very difficult to treat. Sandfly fever, a severe but self-limiting flu-like illness, is caused by a virus.

f. Animal diseases that can spread to humans. There are a number of these in Somalia, including rabies, Malta fever (brucellosis), mud fever (leptospirosis), query (Q) fever, and toxoplasmosis. Rabies is transmitted directly by the animal through a bite or scratch. It is a brain infection (encephalitis) that is always fatal if protective shots are not given following the bite or scratch. The other animal diseases may be transmitted to humans by a variety of means, including inhalation of dried dusts from infected livestock, contact with infected animals' tissues (like the placenta) and body fluids (blood and urine), and consumption of unpasteurized milk.

g. Hookworm and other soil-transmitted parasites. Hookworms enter the body from the soil by directly penetrating the skin (such as bare feet). Roundworms and whipworms enter when persons get small amounts of soil into their mouths or eat raw vegetables contaminated with soil. All of these can cause intestinal disease and other symptoms, such as a cough, produced by their somewhat complicated life cycle once in the human body.

Pests, Vectors, and Animals

Insect and animal pests indigenous to this area present problems as vectors for disease and because of their ability to inflict bodily harm by bites or venoms as described in the infectious disease section. Personal protective measures against insects will greatly reduce the risk of acquiring these diseases. Filth flies spread diseases such as cholera, dysentery, and typhoid. The problem is magnified by the poor sanitary practices in some locales and the sanitation difficulties encountered in the field setting.

Freshwater snails can transmit schistosomiasis. Avoiding freshwater for swimming will minimize this risk.

Stray dogs should be avoided because of the risk of bites and rabies. Water spigots should be protected or raised high from the ground to prevent animals from licking the spouts. Rats and mice, which may be unavoidable in the crowded and unsanitary conditions of the region and in the field setting, can carry disease and provide the means for fleas to spread disease. Rodent control is essential. Frequent garbage burial is necessary, and this may be challenging due to the difficulty of digging in the densely compacted sand or soil. Small mammals such as ground squirrels are naturally infected with the parasite that causes kala-azar.

Plants

The semi-arid areas of Somalia supports a variety of euphorbs, some of which have sharp thorns, contact with which can result in painful puncture wounds and skin abrasion. The high heat and humidity cause such wounds to heal slowly, and they are prone to infection. Many of the euphorbs contain a potent latex vesicant or oil that will irritate or blister the skin surfaces on contact. When the first symptoms appear,

try to remove the oil by washing with soap and water. After you have removed the oil, dry the area.

Khat. The leaves of the *Catha edulis* plant are known as *khat*. *Catha edulis* is a 20-foot high bush that grows at 3,000- to 6,000-foot altitude in East Africa and the Arabian Peninsula (primarily Ethiopia, Kenya, and Yemen). After unsuccessful attempts to ban *khat*, its use was legalized in the region. Freshly harvested *khat* is exported by air to neighboring countries. *Khat* is a stimulant (similar to uppers) that is commonly chewed in Somalia. Its use provides a good feeling, but can cause a paranoid feeling. *Khat* should be avoided because it always increases blood pressure and heart rate. Chronic daily use of *khat* causes hypertension in young adults; severe side effects include migraines, cerebral bleeding, heart and lung damage. *Khat* will produce a positive result in the standard military urine drug screening tests.

Prevention Measures

Immunizations

You should have been given all required immunizations prior to arrival.

Malaria Chemoprophylaxis

Chloroquine-resistant malaria is prevalent throughout Somalia. Therefore soldiers must protect themselves by taking either mefloquine (250 mg tablet) once a week or a doxycycline 100 mg capsule once a day for pilots. Your medical personnel will distribute the appropriate malaria pills. **Note that women must avoid becoming pregnant while taking mefloquine or doxycycline.** Personal protective measures, such as use of repellent, bed netting, and permethrin must be prac-

ticed since no drug is 100 percent reliable and these measures will provide the only protection against other mosquito- and tick-borne diseases.

Water

As in any field setting, and especially in large unit deployments and defensive settings where sanitation is marginal, disease can spread rapidly through food and water transmission. In Somalia, the indigenous water supplies are assumed to be inadequately treated, making the treatment of all water supplies mandatory for the unit or the individual. Field water tanks, Lyster bags, and other storage containers can be easily contaminated by inadequate purifying technique, by ignorance in handling the container, by insect and rodent pests, by wind-borne and airborne agents (infectious, chemical, etc.,), and by malicious intent. Note that containers and tanks normally used for storing or carrying petroleum products should not be used for potable water storage.

Regardless of location, treat all water for the proper amount of time before use unless it is carbonated, recently boiled, or known to be adequately purified by iodination or chlorination. Keep the storage containers covered or capped and guarded. Use bottled water only if the seal is unbroken. Do not use ice cubes (sometimes made from untreated water) unless their source and handling is known to be hygienic. Even alcohol in cocktails does not disinfect the ice. Avoid swimming, wading, or bathing in bodies of standing or slow-moving fresh water (pools, ponds, canals). Water-borne bacterial and viral agents, as well as parasites are easily transmitted by this route.

Food and Ice

Disease transmission through food and ice is also a major risk. Food and ice are to be procured from approved US sources only. **Do not** eat food or ice from the local markets or vendors. Only meals prepared

at approved sites should be eaten. Note that because of the way they are engineered, MREs should be eaten as entire meals; regularly eating only certain parts can cause nutritional deficiencies.

Personal Hygiene

Personal hygiene, to include bathing as often as practical, frequent hand washing, proper dental care, and the maintenance of clean, dry clothing (socks, cotton underwear, boots), is essential. If a shower is not available, sites of perspiration should be washed with a washcloth daily. Foot powder will help prevent fungal infections. Talcum powder will help between thighs and under breasts. Women who develop vaginitis should seek medical care to determine the specific cause (yeast, bacteria, or trichomonas) and then treat themselves with the appropriate cream or inserts. To reduce transmission of respiratory diseases, crowding in sleeping quarters should be kept to a feasible minimum. Head-to-toe sleeping and good ventilation also helps. Only defecate and urinate in constructed latrines or designated areas. This and hand-washing are the most important means to prevent diarrheal illness.

Insects

The use of personal protective measures, such as repellent, clothing, impregnated bad netting, sleeping off of the ground, checking all articles of clothing before putting on, shaking out bedding before entering, and "buddy" inspections, is extremely important to limit the insect problem. The Army's approach to insect repellents involves use of two products, a DEET-containing repellent lotion for skin (NSN 6840-01-284-3982) and a clothing repellent called permethrin (NSN 6840-01-278-1338). Proper wearing of the uniform in conjunction with this system will provide nearly complete protection from vector-borne diseases. The repellent lotion in the green squeeze bottle should be applied to exposed skin including ears, face, and neck. Its area of application should extend

2 to 3 inches under the edges of the uniform to prevent sand flies from crawling under clothing. The permethrin repellent is a spray that must be applied according to the directions on the can. The entire uniform exterior must be sprayed until it looks wet. The permethrin should also be applied to bed netting because its mesh is too large to be a barrier to the small sand flies. The clothing impregnant should be applied prior to deployment if possible and again after the fifth washing. Pyrethrum aerosol (NSN 6840-00-823-7849) or D-phenothrin aerosol insecticide (NSN 6840-01-067-6674) can be sprayed inside bed nets or closed tents before retiring to kill any insects trapped inside. Attached ticks should be identified through periodic body checks and carefully removed. If surveillance detects a significant vector problem, application of appropriate residual insecticides and other area control methods may be indicated. Maintaining personal hygiene, effectively disposing of garbage and human waste, and keeping foods and water sources covered and fly-proofed are also of paramount importance.

Venomous Animals

Awareness and preventive measures are by far the most important measures in avoiding snakes, scorpions, or other desert creatures.

These animals are adapted to being relatively inactive during the heat of the day, so the greater exposure hazard is a twilight or a night. Many of these animals are protectively colored, so they may be hard to see. Avoidance is the best technique--boots and clothes should be shaken before putting them on. Troops should not go bare footed, sleep on the ground, or put their hands in crevices or holes. The keeping of snakes, scorpions, spiders or other native creatures (including dogs) as pets is prohibited. Snake bites and scorpion stings may prove lethal. Capturing the snake without destroying the head, if not too great a risk, will aid in this identification. Poisonous snakes are found in Somalia and include the boomslang, the twig snake, Antinon's black snake, Leakey's saw-

scaled viper, three types of cobras (Egyptian, forest, and spitting), three types of adders (Somali puff, green night, and common). **All snakes should be avoided.**

Heat and Solar Radiation

Hydration enforced by command emphasis is required. "Feeling thirsty" has been shown to be insufficient in predicting hydration needs, and scheduled water drinking is necessary. This may be as high as two quarts per hour. During the hottest months, 1 hour rest periods should follow the noon meal, and the heaviest meal should be saved until the evening. Work should be scheduled during the coolest time of day, strenuous activity at mid-day may have to be restricted to less than 20 minutes per hour during the summer. Conditions enhancing susceptibility to heat include: diarrhea, skin trauma (e.g., heat rash, sunburn), recent use of alcohol, febrile conditions, previous occurrence of heat stroke, dehydration, lack of sleep, fatigue, obesity, older age, poor physical condition, and use of drugs (e.g., "cold" medications, some tranquilizers, antidiarrheal medications).

The use of sunglasses to avoid wind and dust irritation to the eyes as well as to diminish glare is necessary. Head gear to shade the face and neck and provide cooling to the head is also needed. Protection over the ears and nostrils is often needed to keep dust and sand particles from entering these orifices. Clothing and high-grade sunscreen (SPF 15) to protect the skin from sunburn is especially necessary to US troops unaccustomed to the double intensive sunlight in desert areas. Zinc oxide shake lotion is useful to treat jock itch and heat rash. Bactracin/Bactroban can help prevent impetigo from developing at the site of scratches and cuts. Lip balm is necessary to prevent lip chapping. Soldiers must be cautioned not to handle objects left in the sun (vehicles,

water cans, etc) to avoid third degree burns. Petroleum products stored in cans must be vented to prevent expansion and explosions.

Combat Stress

Historically, combat stress reactions occur at a rate of about one for every three or four wounded. In a tense situation where opposing forces are anticipating but not engaging in action and where environmental stresses are high, the number of stress reactions and stress-related increases in diseases and nonbattle injuries can skyrocket. In the present scenario, this may be further complicated by the sight of suffering people.

Uncertainty about family and the folks back home adds to the stress load. Family issues like debt, sickness, and divorce, often difficult to resolve at home, become even more burdensome on deployment. Communication by regular mail is probably the most important measure that can alleviate stress problems. A designated, concerned, and reliable point of contact in the rear who specifically handles family problems and special communications is helpful.

Misconduct combat stress reactions, such as abusing drugs and alcohol, fighting among soldiers, and awakening of racial tensions, can be expected to arise because of the alien culture and religion of the Somali. The uncertain end-point of the deployment, the purported atrocities, and sometimes monotonous duties, and the availability of recreational drugs. Again, protective factors include restricting alcohol availability, enforcing illegal drug prohibition, and communicating popular support for the deployment locally and in CONUS. Promoting a spirit of cooperation with the local population will introduce the troops to the foreign culture and contribute to an understanding of their way.

Venomous Snakes for Somalia and Surrounding Areas

Risk Category I: Major Risk - Frequency of envenomation high; venom highly toxic

Black mamba, highly toxic venom. Found in low-lying open bush country. Very fast and defensive.

Carpet viper, saw-scaled viper, extremely toxic venom. Primarily nocturnal in hot weather; sometimes diurnal in cool weather. May be found basking during early morning in cultivated areas in bushes more than 2 meters above ground. Can bury itself in sand with only head exposed. Likely to flee when encountered, but has been reported to chase victims.

Risk Category II: Moderate Risk - Frequency of envenomation moderate; venom may be highly toxic to mildly toxic

Puff adder, very toxic venom. Primarily nocturnal. Large, bad tempered, and usually encountered along paths or around buildings. Its coloration makes it difficult to see.

Egyptian Cobra, found in termite nests, rodent burrows, rock crevices. Travels at night in search of food, often entering houses in search of prey.

Mozambique spitting cobra. Nocturnal--most bites occur at night. Found in arid areas, savannas and grasslands near water; also found near human habitation. Basks in the sun during the day, but most often found in termite mounds, hollow trees, logs, rock crevices, and rodent burrows.

Spitting cobra. Rarely attempts to bite unless being handled. Prefers grassland environment, is strictly terrestrial, lives in rock crev-

ices or rodent burrows. Travels at night for food, and basks in the sun during the day.

Arabian mole viper. Inhabits relatively moist places near oases, grazing lands, and cultivated areas. Digs burrows under rocks, concrete slabs, logs, or planks. Nocturnal; stays primarily underground. More active during rainy season when burrows flood. Normally not aggressive, but quick to bite if excited.

Contributors to Medical Section

The Defense Intelligence Agency/Armed Forces Medical Intelligence Center; The Defense Pest Management Information Analysis Center; Office of the Army Surgeon General, Preventive Medicine Consultants US Central Command Surgeon; Walter Reed Army Institute of Research, Preventive Medicine Division.

First-Aid

First aid is the immediate treatment administered to a casualty before they can reach medical assistance. Prompt and correct first aid for wounds will not only speed healing, but will often save a life – and that life may be yours! The most important points are to remain calm and use common sense. This short guide is intended as an emergency reference. The tactical situation and the expertise of the personnel present may influence treatment decisions. The four priority life-saving steps in first aid are:

- **Restore Breathing and Pulse**
- **Stop Bleeding**
- **Protect the Wound**
- **Prevent or Treat Shock**

Vital Signs

Check Heartbeat and Pulse:

To Hear a Heartbeat:

For a male and/or child place your ear below and slightly to left of the left nipple; for a female, place your ear just below the left breast. Listen for a heartbeat.

To Feel for a Pulse:

1. Place the tips of your index and middle fingers on the thumb side of the victim's wrist to feel for a pulse. Do not use your thumb as this will confuse the victim's pulse with your own.
2. If a pulse cannot be felt at the wrist, check the carotid pulse gently with your fingertips (it is located in a groove next to the windpipe, deep in the neck) or the femoral pulse (deep in the groin).
3. Once a pulse has been located, count the number of beats in 15 seconds and multiply by 4 or if the pulse is very slow or irregular, count for 60 seconds. A pulse rate may vary depending on the victim's condition.

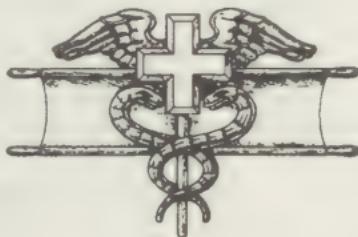
The normal adult male heart rate is between 70 and 80 beats/minute, for a female the rate is 75 to 80 and for a young child 82 to 180. However, excitement, exercise, or fever may increase the rate. Be sure to note whether the pulse is weak, full, bounding or irregular.

Look and Listen for Breathing:

Look for the rise and fall of the chest. If it is cold there may be frost on the victim's breath. Place your ear near their mouth and listen for breathing. Note whether the breathing is regular, rapid, shallow, or shows signs of difficulty. Check airway for obstructions.

Check for Wounds and Injuries:

Look at the casualty from head to foot checking for bleeding, open wounds, external signs of internal injuries and other problems. Remember that many wounds, particularly bullet wounds, have both an entrance and exit hole, check for both. Additionally, large shrapnel wounds may be accompanied by multiple small metal sliver wounds.



CPR

Artificial Respiration:

If the victim is not breathing, check airway and remove any obstructions with hooked fingers.

Mouth to Mouth Method:

With patient lying on back, hold jaw well open, bend head back (prevents tongue falling and blocking airway). Hold nostrils closed with other hand. Place mouth over patient's mouth and exhale. Watch for chest to rise as you blow gently into patient's lungs. (If chest does not rise, turn him on his side and thump between shoulder blades to remove obstruction.) Separate mouths. Take a breath while watching for fall of victim's chest. You should see, feel and/or hear the victim's exhale.

For a child; Do not blow. Exhale normally, or in the case of baby in gentle puffs. Blowing forcefully into a child's mouth can damage delicate lungs.

Arm-Lift Method:

If mouth to mouth technique is not possible due to facial injury or NBC contamination, use the arm-lift method. With victim on back, check airway for obstructions and kneel behind the victim's head. Grasp the victim's hands and place them on their lower ribs, rock forward, pressing downward and forcing air out of the victim's lungs. Then when you meet firm resistance lift the arms upward and backward as far as possible. This process of lifting and stretching the arms increases the size of the chest cavity and draws air into the lungs. Repeat cycle of Press-Lift-Stretch.

REPEAT either method, as quickly as possible for first six inflations, then at 12 repetition per minute until normal breathing is re-established.

ON'T GIVE UP! If breathing doesn't start, keep up artificial respiration for at least an hour.

NECK HEARTBEAT. If no pulse, start alternating cardiac resuscitation and artificial respiration. Give 2 full breaths, for each cycle of 15 compressions in single rescuer CPR.

Cardiac Resuscitation:

Regardless of the method of artificial respiration, if there is no pulse and after 10-12 breaths there is no apparent improvement in the casualty's condition, cardiac resuscitation (external heart massage) should be started.

There is no time to lose! If the rescuer can't feel a pulse, he is going to have to circulate the blood as well as breathe for the victim.

External Chest Compression

The victim always must be in the horizontal position when external chest compression is performed. During cardiac arrest, even during properly performed chest compression, inadequate blood flow to the brain may exist when the body is in an upright position.

1. With the middle and index fingers of the lower hand, the rescuer locates the lower margin of the victim's rib cage on the side next to the rescuer.
2. The fingers are then run along the rib cage to the notch where the ribs meet the sternum in the center of the lower chest.
3. With the middle finger on the notch, the index finger is placed next to the middle finger on the lower end of the sternum.
4. The heel of the other hand (which had been used on the forehead to maintain head position) is placed on the lower half of the sternum, and just next to the index finger which is next to the middle finger that located the notch. The long axis of the heel of your hand should be placed on the long axis of the breastbone. This will keep the main line of force of compression on the breastbone and decrease the chance of rib fracture.
5. This first hand is then removed from the notch, placed on top of the hand on the sternum so that hands are parallel and directed straight away from the rescuer.

Cardiac Resuscitation Continued:

6. The fingers may be either extended or interlaced but must be kept off the chest.
7. The elbows are straightened by locking them, and the rescuer positions his shoulders directly over his hands so that the thrust for external chest compression is straight down. If the thrust is other than straight down, the torso has a tendency to roll, part of the effort is lost, and the chest compression is less effective and requires an inefficient amount of effort from the rescuer.
8. To compress the sternum of a normal-size adult you must push with enough force to depress the breastbone 1 1/2 to 2 inches. With each compression you want to squeeze the heart or increase the pressure within the chest so that blood moves through the body. You must compress in a manner at a rate of 80-100 times per minute.
9. If you use the weight of your body, you do not depend on the strength of your arms and shoulders as much. Instead of having to push from your shoulders, you let the natural weight of your body falling forward provide the force to depress the victim's sternum. Keep the arms straight.
10. Do not lift your hands off the chest, or change their position in any way, because correct hand position may be lost. Bouncing compressions must be avoided since they are less effective and are more likely to cause injury and additional problems.

Traumatic Amputation

1. Recognize and assess injury. Has the part been completely severed?
2. Apply direct pressure to stump and elevate.
3. Apply pressure dressing and secure with self-adherent gauze bandage.
4. Reinforce with more dressing and secure with self-adherent gauze bandage.
5. Assess for bleeding control. If bleeding is not controlled, proceed to pressure point. If still not controlled, apply tourniquet *no more* than 2 inches nearest to stump. Treat for shock and evacuate.
6. If the tactical situation permits, treat amputated part as follows:
 - a. Wrap the part in dry sterile dressing and secure with self-adherent gauze bandage.
 - b. Place the part in a plastic bag and label bag with the patient's name, date, and time. Seal bag.
 - c. Place the part in a cooler or in another appropriate container on top of a sealed bag of ice or cold packs.

Note: The part is to be in a cool environment. It must *not* be submerged in or come in direct contact with the ice or ice water.

7. Transport the amputated part in the cooler with the patient to hospital if possible.

Sucking Chest Wound

1. Examine casualty and expose a large area around the wound. Remember to check for exit wound on opposite side. Cut away clothing if necessary.

2. All penetrating chest wounds will be treated as sucking chest wounds.

NOTE: The characteristic hissing, sucking, and fluttering noise that is produced as the patient breathes may not be present.

3. A SUCKING CHEST WOUND MUST BE CLOSED IMMEDIATELY BY ANY MEANS AVAILABLE. Use the palm of your hand initially to seal the wound and prevent additional air from entering the thoracic (chest) cavity. The wound should be sealed after the patient forcibly exhales. TREATMENT SHOULD NOT BE DELAYED TO PREPARE DRESSINGS.

4. Prepare an occlusive (air tight) dressing of plastic. Sterility should be maintained to prevent further wound contamination. The rescuer might consider using the inside of the plastic wrappers from trauma pads, IV bags, or other medical supplies as these are relatively sterile. The occlusive dressing should be at least 2 inches wider than the diameter of the wound.

5. Cut plastic to required size. Place in palm of hand (clean side up) and apply directly to the wound. Secure three sides of the plastic to the patient with 3-inch adhesive tape. Have the patient forcibly exhale. At the end of the exhalation, seal the remaining side with adhesive tape. When sweating prevents

maintaining a seal (i.e. tape does not stick to the patient) or if the wound is massive, trauma pads should be placed over the occlusive dressing and secured in place with cravats.

6. Have the casualty lie on the injured side to allow the lung on the uninjured side to expand more freely. Treat for shock and evacuate.

7. Reassess patient's vital signs frequently.

- a. Respiration rate and quality
- b. Breath sounds
- c. Blood Pressure
- d. Pulse

8. Should the patient develop increasing respiratory difficulty and extreme restlessness and anxiety, air trapped in the chest cavity (tension pneumothorax) must be suspected. The signs of tension pneumothorax are:

- a. Cyanosis (blueness of skin)
- b. Tracheal deviation
- c. Weak rapid pulse
- d. Hypotension (decreased or lowered blood pressure)

If tension pneumothorax is suspected, immediately lift on corner of the occlusive dressing to break the seal and allow the release of excessive air pressure from the thoracic cavity. The patient's condition should improve as the pressure is released. The occlusive dressing should then be resealed after the patient forcibly exhales.

Other Wounds

General: Expose wound, control bleeding, apply sterile dressing, treat for shock. Look for exit wound. Do not clean wound.

Jaw: Clear and maintain airway, stop bleeding with direct pressure, do not bandage mouth shut, support jaw, position head to allow drainage from mouth.

Head:

Elevate head. Clean the airway and protect wound. Position head to allow drainage from mouth. Do not give morphine.

Belly:

Do not touch or replace organs. Use loose, dry sterile dressing. Give no food or liquids.

Shock, Sprains, Fractures and Dislocations

	Signs/Symptoms	First Aid
Shock	Pale, clammy wet skin, nervousness and thirst. They may pass out.	<ol style="list-style-type: none">1. Lay patient on back, elevate feet, loosen clothing, keep warm.2. Feed hot liquids if conscious.3. Turn head to side if unconscious. Remember shock can kill.
Sprains, Fractures, and Dislocations	Localized pain and swelling possibly accompanied by discoloration. If a fractured bone protrudes through the surface of the skin, it is considered a compound fracture and the wound should be treated accordingly. Dislocations and fractures may exhibit obvious deformity.	<ol style="list-style-type: none">1. Remove clothing around the site of the affected area or dislocation. If necessary cut clothing rather than causing further injury or discomfort.2. Prior to and following splinting, check blood circulation and for feeling.3. Splint all fractures in a manner which immobilizes both the joint above and the joint below the fracture site.4. Fracture joints should gently be returned to splinting position if this can be accomplished without using excessive force or causing the patient to experience extreme pain.5. Joints that cannot be gently returned to splinting position should be splinted in their current position.6. Straighten fracture of a long bone with gentle traction prior to splinting.7. Cover all open wounds with sterile dressings prior to application of a splint.8. Pad all splints to prevent excessive pressure.9. Immobilize fractures prior to evacuating.10. Splint fractures of the lower arm with the hand in position of function.11. Apply gentle traction while splinting.12. Leave fingers and toes exposed if possible.13. Splint should not impair circulation.14. Elevate the extremity following immobilization where possible.15. Elevate the injury, and for sprains apply ice to the affected area periodically for approximately 24-48 hours following the injury.16. For dislocations immobilize and apply ice to the affected area periodically for approximately 24-48 hours following the injury.

Heat Injuries

	Signs/Symptoms	First Aid
Dehydration	<p>1-5% <i>Fluid Loss</i>: Thirst, vague discomfort, lack of appetite, flushed skin, impatience, sleepy, nausea. 6-10% <i>Loss</i>: Dizziness, headache, labored breathing, no salivation, indistinct speech, unable to walk. 11-20% <i>Loss</i>: Delirium, swollen tongue, unable to swallow, dim vision, numb</p>	<ol style="list-style-type: none">1. Keep cool, shaded and loosen clothes.2. Give water with a little dissolved salt (a pinch per pint).3. Casualty needs rest and medical treatment. <p>NOTE: Increasingly noticeable as more body fluid is lost. Other heat injuries are usually directly related. Often an overlooked cold weather injury. More than 20% fluid loss is usually FATAL.</p>
Heat Cramps	The person experiences muscle cramps of arms, legs and/or stomach. The person may also have wet skin and extreme thirst.	<ol style="list-style-type: none">1. Move the person to a shady area or improvise shade and loosen his clothing.2. Give him large amounts of cool water slowly.3. Monitor the person and give him more water as tolerated.4. Seek medical aid if the cramps continue.
Heat Exhaustion	The person experiences loss of appetite, headache, excessive sweating, weakness or faintness, dizziness, nausea, and muscle cramps. The skin is pale, cool, moist and clammy.	<ol style="list-style-type: none">1. Move the person to a cool, shady area or improvise shade and loosen/remove his clothing.2. Pour water on him and fan him to permit coolant effect of evaporation.3. Have him slowly drink at least one canteen full of water.4. Elevate the casualty's legs.5. Seek medical aid if symptoms continue.
Heatstroke	The person stops sweating (hot, dry skin). He first may experience headache, dizziness, nausea, vomiting, fast pulse and respiration, seizures, and mental confusion. He may collapse and suddenly become unconscious. THIS IS A MEDICAL EMERGENCY. HEATSTROKE CAN KILL IF IT IS NOT TREATED PROMPTLY AND CORRECTLY.	<ol style="list-style-type: none">1. Move the person to a cool, shady area or improvise shade and loosen his clothing, remove the outer garments and protective clothing if the situation permits.2. Immerses him in cool water. If he cannot be immersed, the arms and legs should be massaged with cool water. Pour cool water on him and fan him to permit cooling by evaporation.3. If conscious, have him slowly drink at least one full canteen of water.4. SEEK MEDICAL ASSISTANCE AND EVACUATE AS SOON AS POSSIBLE. PERFORM ANY NECESSARY LIFE-SAVING MEASURES REQUIRED.



